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THE MOTOR CYCLE

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No. 406. Vol. 9. THURSDAY, JANUARY 5th, 1911. Price 1d.

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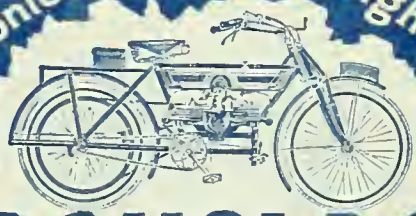

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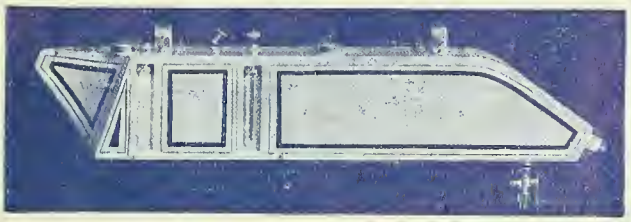

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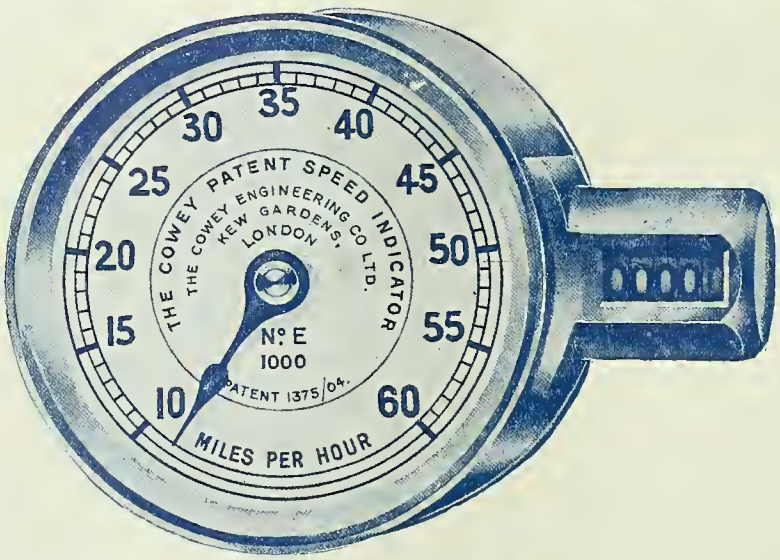

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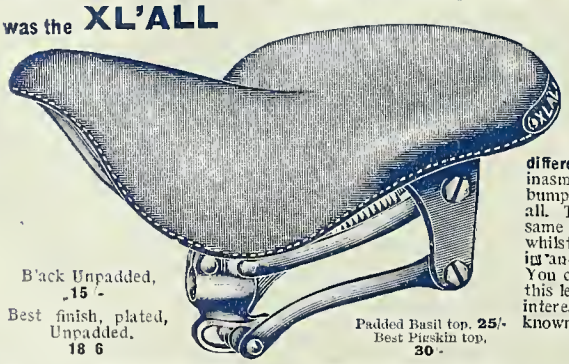

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Best finish, plated, Unpadded. 18/6
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The Hon. Secretary of the Birmingham Motor Cycle Club writes: I have now ridden this saddle some 2,500 miles, and I must say it is, **I am sure, the most comfortable saddle on the market.** I find the action of the saddle **is quite different to any other** I have ridden, inasmuch that one can ride over the bumpiest roads without bouncing at all. The saddle appears to keep in the same horizontal plane as it were, whilst the machine itself is bumping in and out of the ruts in the road. You can make what use you like of this letter, as I feel it my duty in the interests of motor cycling to make known the virtues your saddle.

Yours faithfully,
R. VERNON C. BROOK.

THE MOTOR CYCLE

Vol. 9. No. 406. CONTENTS. Jan. 5th, 1911.

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Lessons from the Winter Trials.

MANY are the lessons which may be deduced from the five winter reliability trials held in the North, South, East and West of England last week. One thing in particular has been demonstrated in no inconclusive manner, and that is that the motor cycle can be relied upon as an all-weather machine in spite of the carping statements of the sceptical to the contrary, and there is every likelihood that the industry generally will materially benefit by the advertisement and the fillip which has been given to the motor cycle by the complete success of all five trials. Grease there was in abundance, but the modern low-built machine provides no terrors in its skidding propensities.

There is, however, still room for improvement in stability and more efficient non-skid tyres, as also in mudguarding. The standard forms of mudguards and ordinary mudflaps for the magneto were proved to be inadequate in keeping machine and rider clean, and many competitors, expecting trouble, had wisely contrived larger mud screens of all sorts of designs and in all positions. Several of these devices undoubtedly proved really excellent. It may be observed that practically every machine had side extensions to the front mudguards, some the whole length of the guard, and it was noticeable that a goodly number had fitted belt guards around the engine pulley.

Last but not least the variably-geared machine scored another triumph. A number of riders failed on hills owing to misjudging the gradients in the dark, others were afraid to "rush" the hill owing to the grease, but the change-speeders were prepared for all sorts of conditions and crawled uphill and round corners comfortably.

The A.C.U. 5/- Membership Scheme.

IN the issue of December 22nd we published a brief account of the Auto Cycle Union Council meeting at which was approved and passed the scheme by which motor cyclists may become members of the A.C.U. and obtain certain advantages for an annual subscription of 5s. This decision was gratifying to us, as we first suggested an exactly similar scheme in April, 1908, and briefly referred to the fact in "Current Chat" of December 22nd.

If our advice had been followed at that time, the A.C.U. might have had a very much larger membership than it now possesses; in fact, it would have had two years' start of rivals who are preparing to give motor cyclists the same benefits and terms that it has so tardily acknowledged as being the only course. We quote from *The Motor Cycle* of April 29th, 1908:

"The fee we suggest for unattached riders to obtain certain advantages, such as touring facilities, legal advice, the right to exhibit the A.C.U. badge, etc., but not free registration for competitions, admission to papers and discussions at the Club, the use of the Club room, or the copy of *The Journal* or handbook, is five shillings.

"The executive of the A.C.U. might be led to think that any scheme for unattached riders would upset the affiliation scheme, but there is no reason why it should do so if the unattached rider is given to understand by documents or otherwise that he is not having the same advantages as an affiliated member of a provincial club, and the fact that he is not a member of a provincial club causes him to pay slightly more for the advantages he receives from the A.C.U."

MAGNETO POSITION.

A Critical Review of Current Practice.

It would be rather interesting to know exactly what reasons have led motor cycle designers to adopt the particular positions of the magneto which are characteristic of their machines. What are the circumstances which dictate these positions? Is it a question of ease and cheapness of production, that is, easy casting and little or no "assembling"? Is it a genuine desire to make the motor cyclist's path rosy by putting the magneto where it is difficult to get at and fiddle with? Is it an equally genuine desire to put it where he is literally invited to tinker with it? Or is it, we wonder, just a commonsense intention of getting it into a situation which is at once expedient, clean, accessible, and free from the likelihood of any kind of trouble? If it be the latter, then there is an extraordinary diversity of opinion—a diversity so far reaching that if any single position be right, many others are so widely different from it that they *must* be wrong. *Tot homines, quot sententiæ,*

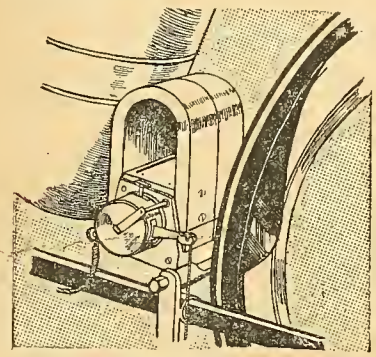


Fig. 1. Scott and Clyno.

says the sage, and it follows that *all* cannot be right. In reviewing magneto position in a general way, as we propose to do by dealing with a few specific and representative cases, we are going to steer clear of contentious argument by the simple expedient of leaving the decision as to who is right and who is wrong in the hands of our readers. First of all, therefore, we will try to see what is the theoretically ideal position for the magneto by considering exactly what to avoid.

As to wear of the moving parts, practically every self-respecting machine is irreproachable, the general design being such that, short of being literally smothered with mud or sprinkled with dust, the bearings and contact breaker remain almost entirely unaffected. Although the machine is of itself practically hermetically sealed in its case, there should be no relaxation of precau-

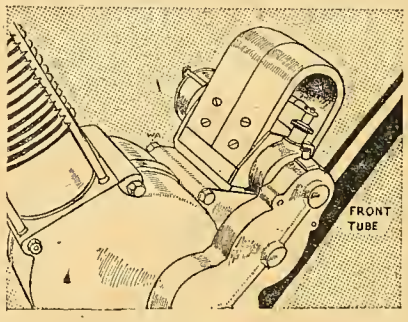


Fig. 2. Indian.

tions against the entry of dirt in any form, hence it is a desirable thing to get the magneto in a position where it is unassailed by mud and dust, and not only so, but if possible to provide it with an additional cover. The function of the latter is primarily to keep off wet and, secondarily, to keep the machine clean, though most salesmen reverse the order of these points. So long as high tension terminals are exposed to the elements leakage is always liable to occur, for nothing is so hard as to keep rain off any part of a motor cycle. A makeshift arrangement in this connection is not infrequently used, and consists of the simple process of smothering the h.t. magneto terminals with vaseline or other thick grease. This is all very well in its way, but a point that is frequently forgotten is that grease plays havoc with the rubber insulation of the h.t. cables. We are mentioning this fact be-

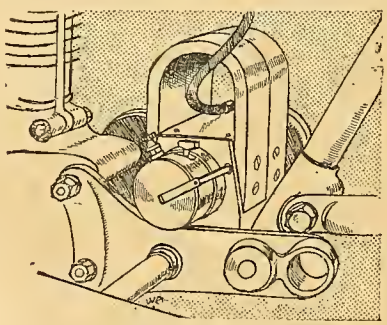


Fig. 3. Rex.

cause it is the reason why one of our machines recently developed an unaccountable and almost untraceable misfire. The moral, of course, is to wipe the grease away as soon as heavy rain is over.

Keep the Magneto Dry.

Now there is another reason why the ordeal by water should be avoided like the plague, and this is that water is really the one thing that can get worked in to the ball bearings of the armature shaft. The magneto manufacturers are wise to advise users to oil their machines very infrequently, but unfortunately most riders take the superlative too wide, and are afraid to oil the bearings at all. This is where water comes in—and it is really surprising how very small a drop of water needs to be to rust up a dry ball race. The result of that rusting is that inappreciable wear takes place, but when you remember that the armature only clears the pole-pieces of the magneto by about a hundredth of an

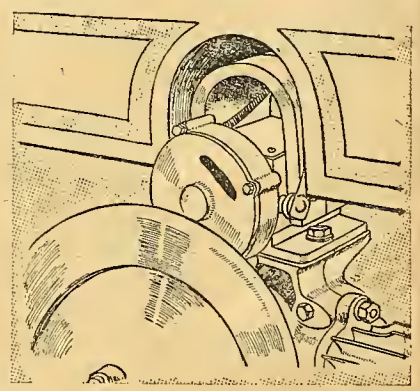


Fig. 4. Douglas.

inch each side, you realise that there is not much room for this wear to take place without any adverse effect being felt.

So much for mud, dust, and water. A good magneto cover, such as is fitted to the B.S.A., Ariel, Singer, Rudge-Whitworth, and others, will obviate the difficulty in almost any position that the instrument gets relegated to. Now let us see what other undesirable circumstances are to be avoided.

First and foremost comes heat, yet how many designers have given this a moment's thought? That a magneto will continue merrily to spark in some of the positions it finds itself in on a motor cycle is, in our opinion, a most extraordinary testimonial to the all-round effi-

Magneto Position.—

ciency of the machine under adverse conditions. But not all magnetos will stand bad treatment in this way, and we can

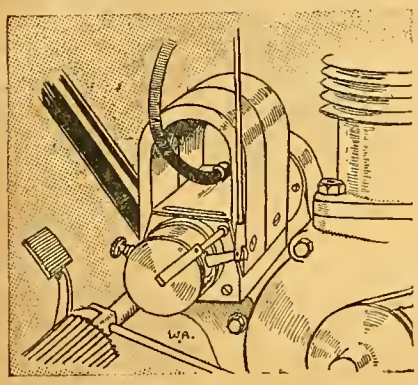


Fig. 5. Singer and Humber.

call to mind at least one make of motor cycle which used to suffer extremely badly in this respect, for the insulation on the unfortunate little superheated magneto would invariably go out on strike after a long non-stop run, and then it was a case of all hands to the pumps, or rather all feet to the pedals, to get going again. Furthermore, this particular magneto could not be even distantly considered without undoing a handful of tiny little screws. But things are changed now. Still, it cannot be denied that to bake a magneto is to send out a general invitation to trouble. The ideal temperature for the machine is stone cold, so if a covering can be fitted care should be taken to prevent it becoming an oven.

Short Wires Desirable.

The next point to consider is the proximity of the magneto to the crank-chamber, and this has a bearing not only on the magneto drive, but also upon the length of the high tension leads to the plug. Those leads should be as short as possible to guard against the possibility of their flapping about and wearing away the insulation, and, further, they should be kept well clear of the ribs on the cylinder casting. But the

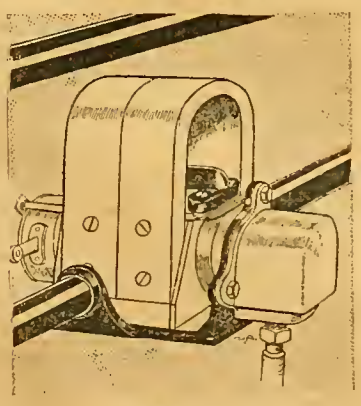


Fig. 6. Bat. (In tank).

principal reason for keeping the machine somewhere near the crank chamber is to reduce as far as possible back lash in the transmission. The greater the number of links in the chain or the greater the number of idle pinions the greater is the unavoidable back lash, and the worse the back lash is to start with the quicker it becomes appreciable, for the load on the magneto transmission in a single-cylinder motor cycle is the worst possible, being intermittent at both ends, and the periods of full and light load do not synchronise.

Next, we require to guard the magneto against petrol. A flooding carburetter dribbling on to the magneto directly underneath is a thing to be avoided almost as much as anything, for petrol has a wonderful capacity for cleaning oil off bearings just when it is least wanted to, and petrol is a very difficult thing to keep out in spite of its volatility. It will pour through a crack that would be waterproof for years, and, like most thin oils, it "climbs."

As to accessibility, so long as the contact breaker cover and the h.t. terminal are moderately get-at-able, nothing more is required, for the magneto in ninety-nine cases out of a hundred does *not* cause the least trouble. If more motor cyclists would adopt the plan of taking the magneto entirely for granted a lot

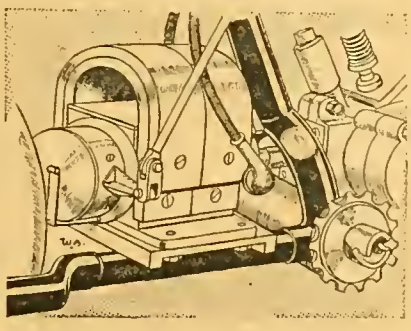


Fig. 7. Enfield.

of trouble would be avoided. Look at it by all means, but look at everything also twice or three times before paying it any attention, unless the symptoms point directly and unmistakably towards it.

The Mounting Platform.

Lastly, the magneto *must* be bedded down securely and rigidly. It is a heavy piece of mechanism, subject to a good deal of vibration, both from road and engine, and driven intermittently and at a high speed, consequently no platform can be too strong for it.

Turning now to the sketches reproduced of different examples, they are practically self-explanatory, at all events to anybody who has a rough idea of the general design of the respective machines.

Fig. 1 is the Scott idea, the only disadvantage of which is the fact that the magneto is driven through two chains comprising no less than 112 links. When the engine is running fast all the lag can be taken up with the spark-advance lever, but when it is pulling slowly there must be a certain amount of lag. This state of affairs would be, of course, far worse with a magneto driven at half-engine speed. As it is driven at engine speed on the Scott the trouble is not very perceptible.

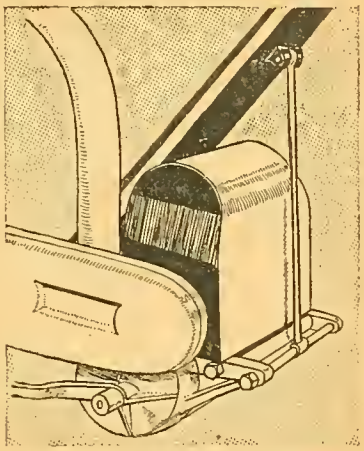


Fig. 8. Ariel and B.S.A. (Magneto enclosed.)

Fig. 2 represents the single-cylinder Indian arrangement. The magneto is driven by a train of four enclosed spur pinions. It is bedded down to the crank chamber in front of the engine.

The Rex design is shown in fig. 3. This is another gear driven magneto, and it is out of the way of mud and dust. It is attached to a special frame bracket behind the engine.

The magneto on the Douglas, fig. 4, is bolted down on to the crank chamber between the horizontal cylinders. On the single-geared model it fits into a cavity let into the tank, and a small spark advance lever fixed to the contact-breaker becomes, therefore, quite handy. The drive is by enclosed gearing direct from the crankshaft.

In fig. 5, the magneto is provided with a special platform cast on to the front of the crank chamber.

The Bat position is one of the most characteristic. Driven by a couple of trains of enclosed bevel gearing and a vertical shaft, the magneto is housed in a cavity in the petrol tank, and thus has an almost ideal position. The sketch shows how its bed is made, an integral part of the lower horizontal tube of the cycle frame. The long vertical shaft gives a springy drive to the armature which is in every way excellent. One of the most characteristic magneto positions is to be

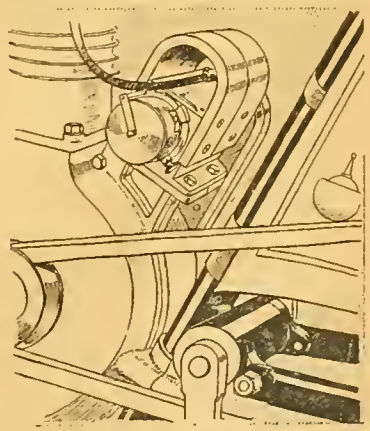


Fig. 9. N.S.U.

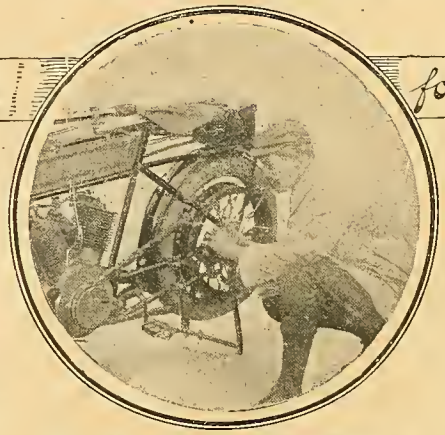
Magneto Position.—
found on the new Royal Enfield lightweight twin, in which the machine is placed in a fore and aft position, and driven by a bevel gearshaft from the camshaft, which applies to the rear cylinder; it is thoroughly accessible, and well out of harm's way. On the single-geared model the magneto is in a similar position, but placed upside down. The sketch fig. 7 illustrates the starting handle claw fitted to the two-speed chain-driven counter-shaft.

The magneto on the Ariel machines, fig. 8, is covered in with a dust and wet-proof *papier-maché* case. Its position in front of the engine and over the silencer is similar to that of the Triumph and many others. Most makers who adopt this position rely upon a large mudflap to protect the magneto. In the case of the B.S.A. machine it is completely enclosed in an aluminium case. It is a shade close to the silencer. An enclosed chain drive is used.

The N.S.U. machines have the magneto fixed on to a platform cast as part of the crank chamber behind the cylinder. In this machine a chain drive is also used. A number of manufacturers utilise the space at the rear of the cylinder, carrying the magneto machine vertical, including the P. and M., Rover, Arno, V.S., Premier, Wanderer, single-cylinder Moto-Rêve, etc.

Several other magneto positions have not been illustrated, as they differ in detail only from the examples we have dealt with. The Corah, the Ariel lightweight, and 2¼ h.p. F.N. have the magneto on the top of the change speed gear box behind the engine. The four-cylinder F.N. and T.A.C. machines have it in front of the engine, direct driven from the crankshaft, and use a separate high-tension distributer.

Hints & Tips for Motor Cyclists.



LOWERING THE COMPRESSION RATIO.

343. A few engines turned out in 1907, 1908, and 1909 possessed a compression ratio which was uncomfortably high for ordinary purposes. Any owner of such an engine who can afford to sacrifice a proportion of his engine power may easily convert such engines to a lower compression ratio. He must be prepared to sacrifice a certain percentage of his speed on the flat and of his hill-climbing power, though the latter is negligible, as the engine will keep on climbing at low speeds much longer with a lowered compression (with the high compression such engines knock badly as soon as the speed drops). Generally speaking, the advantages of the lowered compression are that the engine becomes more flexible, and loses its tendency to knock, besides starting more amenably.

To lower the compression, remove the cylinder, and cut a paper pattern of the cylinder baseplate as accurately as possible, taking particular pains to mark the size and position of the holes through which the four securing bolts pass. Take the pattern to a tinsmith, and get him to make a dozen duplicates of the pattern in sheet tin. In the first test insert enough of these tin washers between the crankcase and the cylinder to raise the cylinder one-eighth of an inch; the number may be varied in subsequent tests until a compression ratio is attained which seems ideal for the country in which the machine is used. When the engine is tested with the washers in position, the valve tappets will also need varying, so that, however high the cylinder is packed, there is just a bare clearance between the stem of each valve and its tappet. This is the most tiresome part of the conversion. The last time I made an experiment of this sort I cut half a dozen discs of tin of varying thicknesses, each about the size of half a crown, nicked their edges, and bent them so that they served as caps for the tappets during the experiments. When the best compression ratio had been found, I had new tappets turned to the exact length required. Of course, if the engine has adjustable tappets, this point presents no difficulty. When the final adjustment is decided upon, the cylinder must be removed once more with an eye to stopping oil from leaking out through the washers. A smearing of fish glue or seccotine is as good as anything. If the hill-climbing powers of the engine are seriously impaired by the alteration, it should be remembered that the converted engine will now take a very low gear without overheating.

IMPROVISED FOOTRESTS.

349. Not infrequently in the course of a tour a tumble will "carry away" both footrests and the problem then is how to dispose of one's feet. You are indisposed to spend several shillings on a mechanical rig up, and you may not procure spares from the makers without some delay. Any straight stick—*e.g.*, half a broom handle—can be made to serve admirably with the aid of a few feet of twine or copper wire. Lash it amidships to the front down-tube of the frame at a suitable height, and tie stays to each end of it from the steering head and the front crank case lug. It can then only move in the direction of swaying sideways, and your feet, one on each end, will hold it steady in that plane; in fact, it is as comfortable as the standard bar.

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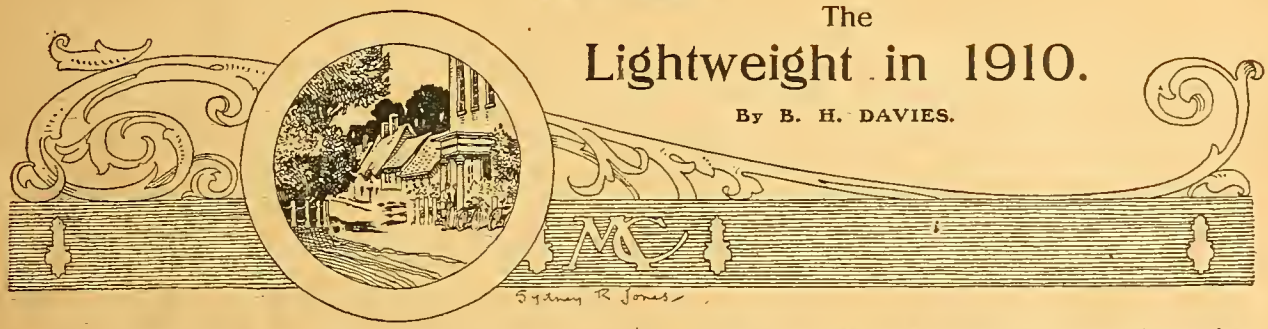
METAL CABLE CLIPS.

350. A good many makers restrain the slack of the high-tension cable by threading it through a small metal clip fastened to the lower tube of the frame. This is all very well when the cable is new, and its rubber is absolutely sparkproof, but when the cable begins to perish a trifle a percentage of the current will escape back to earth, and the day will come when it provides a complete short circuit. Hence I make it a rule always to fit a stout rubber pad at this point.

DRESSING LEATHER CLUTCHES.

351. Now that leather-faced clutches are again becoming fairly common I make no excuse for repeating an ancient hint with regard to dressing leather. The makeshift rider has an idea that any oil suits leather. As a matter of fact most oils contain a small percentage of acid, and the acid harms the leather as much as the other constituents benefit it. In addition, leather is far from porous, and the oil must be given time to percolate into its fibres. Only two ordinary commercial oils are really suitable for leather dressings, viz., castor and Collan, and each should be given twenty-four hours to incorporate itself with the leather. Collan oil looks like a paste, and I always thin it down under heat before application. I find that a good rubbing with Collan oil, followed by twenty-four hours rest, and a final mopping off of all superfluous lubricant, makes a leather clutch soft in action for a thousand miles, whereas a mere squirt of castor oil works off in 100 miles.

352. An ordinary adjustable spanner may be utilised as a sparking plug holder for testing spark by wedging it between the bottom of the tank and the frame. Insert the sparking plug in the jaws of the spanner, and connect the high tension wire in the usual way. If there is no room between the tank and the frame the same results will be obtained by wedging the spanner between the radiating fins of the engine, taking care that the wedging action is not too severe or the thin radiators may become damaged.



The Lightweight in 1910.

By B. H. DAVIES.

AS I have never before posed as a lightweight enthusiast, I am glad of an opportunity to pay my admiring testimony to the unparalleled and magnificent development these machines have undergone during the past year. This article will consist primarily of statistics, showing how the lightweight as a type has emerged from the many searching trials organised by the leading clubs during 1910, and will conclude with a few deductions from the evidence thus collected and arranged.

However useless the Quarterly Trials may seem to be from the standpoint of a test for established 3½ h.p. machines, the close inspection and strict marking they afford provides a splendid test of any new type of motor bicycle in the earlier stages of development, and I shall commence with these trials, which afford most suggestive evidence of the strength of the lightweight movement.

Lightweights in the Quarterlies.

Date.	Conditions.	Entries.	Complete Non-stops.	Mechanical Non-stops.	Stops on Hills.	Retired	Finished.	Percentage of Finishers.
Jan.	Awful	15	0 (0%)	5	5	1 (7%)	14	93%
April	Good	17	11 (64%)	13	2	0 (0%)	17	100%
July	Wet. windy	22	15 (68%)	19	0	0 (0%)	22	100%
Oct.	Awful	15	3 (20%)	5	?	7 (47%)	8	53%

The next trials in order of severity are the long-distance trials of a semi-social order, such as the London to Edinburgh. In these we have no precise information as to the number of failures on hills (as the hills are not observed) nor as to the number and character of minor stoppages sustained; but it is good testimony if a machine manages to finish. It proves that the engine has maintained its power, and given very little trouble. The only seriously contested trial of this nature during 1910 was the London-Edinburgh, in which the lightweights put up a splendid show, as follows:

Date.	Conditions.	Starters.	Gold Medal.	Double Gold Medal	Retired.	Finished.	Percentage.
May	Good	22	17	8	5	17	77%

The two big trials of the year—the Scottish Six Days and the A.C.U. End-to-end—were considerably more severe than any road trial ever previously held in England, the Scottish event in particular easily beating all records for severity both of conditions and of route. In each trial the lightweight acquired remarkable credit, as follows:

Date.	Conditions	Starters	Gold Medal.	Silver Medal.	Bronze Medal.	Retired	Finished.	Percentage.
Scottish trials June	— Severe	4	2 (50%)	2 (50%)	0	0 (0%)	4	100%
End-to-end July	Mixed	11	3 (27%)	3 (27%)	1	4 (36%)	7	63%

In addition, we must remember the speed records set up between Land's End and John-o'-Groat's. In July Mr. Harold Cox covered the distance of 890 miles (approximately) on a 1¼ h.p. Singer Moto-Velo in 57h. 26m. (figures which come midway between Silver's time on a far more powerful Quadrant in 1903, and Mills's time on a two-speeded Raleigh of double the horse-power in 1904), but scarcely were these figures recorded than Eli Clark on his 2¾ h.p. Douglas rode from End-to-end in 39h. 40m.—a time far better than any previous attempt, save only Ivan Hart-Davies's sprint on a machine developing about 4½ h.p.

The Year's Progress.

The foregoing figures are in reality a great deal better than they look. In several of the trials the percentage of lightweight successes is sadly marred by the inclusion of somewhat experimental and inferior machines, hastily glued together, and entered for tasks which no impartial judge could expect them to surmount. It would have been invidious for me to compile a catalogue of first-rate lightweights and construct separate statistics showing only the prowess of half a dozen leading and established makes. Had I attempted this I could have shown almost a hundred per cent. record in all trials for the five or six best examples of the type. However, from the mixed evidence given, we are amply justified in deducing the following facts:

(1.) A great number of sound lightweights are being constructed; they vary from 90 lbs. to 130 lbs. in weight, ready for the road, with a range of horse-power from 1¼ to 3. They cost on an average £10 less than a standard medium-powered tourist machine of equal quality.

(2.) Generally speaking, they can hold their own with higher-powered machines at touring speeds, so far as reliability is concerned.

(3.) Judging especially from the January and October Quarterlies, they are far from being as weatherproof as the 3½ h.p. type. In these two trials, when the weather and road conditions were unspeakable, the lightweights *non-stop* percentages fell to 0% and 20%, though the percentage of *finishers* was 93% in January, when the conditions reached the limit of severity, and 53% in October. In both these trials everything was against hill-climbing, and in the October trial the rain found out any weak points in the transmission. We must, therefore, deduce that in this respect the lightweight still evinces two marked defects. It lacks the engine power to cope with heavy climbing handicaps, and its transmission is not weatherproof. A variably-geared drive, arranged to admit of a larger engine pulley, is the obvious and inevitable remedy for both weaknesses.

The Lightweight in 1910.—

(4.) The lightweight is becoming very popular with amateur riders. Classifying the entries, the medium-powered, medium-weight machine is apparently more popular than some of the flimsier machines.

(5.) As a fair weather, summer mount in ordinary country the lightweight of any type is clearly already the equal of its heavier and more costly competitors.

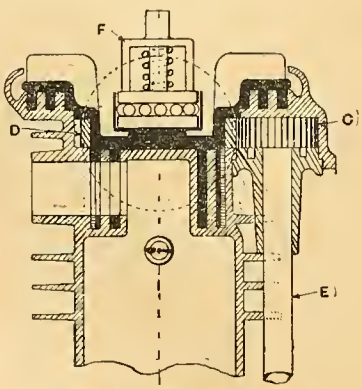
(6.) In respect of hill-climbing power, we have no official evidence to go upon other than the Quarterlies, in which the hills are not really exacting. Taking personal observation into account, I should say that in fair weather the lightweight is about equal to the tourist types in climbing capacity, provided its rider is not too heavy, and is prepared to give plenty of l.p.a. Its slight actual inferiority in climbing is balanced by the comparative ease with which it can be restarted or pushed in event of failure. This point was clearly demonstrated in the Scottish Trials, where all the machines, irrespective of horse-power, were hard pressed on several hills. In bad weather it is distinctly inferior as a hill-climber, and will remain so until it is provided with a variable gear, and with an engine pulley of more rational dimensions. A narrow wet rubber belt *cannot* grip on a wet pulley little more than the size of a five-shilling piece.

M.C.C. WINTER RUN. PREPARING TO LEAVE SALISBURY.

The two ladies in the competition may be seen in this illustration. On the left F. A. McNab and A. L. Ommaney (Trump-Japs). H. R. Purchase (2½ h.p. A.J.S.) and A.C. Robbins (3½ h.p. Humber and sidecar) restarting on the last stage of the run.

Another Rotary Valve Engine.

ROTARY valve engines are very much in the air just now. The accompanying drawing is that of a new type which has been patented by Mr. W. H. Clegg, 136, Browhead Road, Burnley, and differs from others described and illustrated in this journal. If these are carefully compared with the drawing herewith the points of difference become readily apparent. The heavy black lines in the section denote the rotary valve, the gastight joints being ensured by a number of concentric rings and grooves which intermesh with each other. The inventor claims that this is a proved system of ensuring gastight joints, and mentions as a comparison the ordinary piston ring, which depends upon the perfect fit of the ring in the groove to prevent leakage past the back of the ring. In some cases the upper concentric rings are provided with split rings like ordinary piston rings, thereby ensuring a constant pressure against the walls of the groove in which they rotate. The concentric rings, it will be noticed, are in some instances deeper than others, the port or ports being cut through the deep rings.



Section of a new rotary valve engine.

The method of rotating the valve is shown on the right of the illustration. A vertical shaft driven off the crankshaft of the engine and carrying a pinion C on the top rotates the wheel D which is shown in section and surrounds the valve. It will be noticed that the number of teeth in the pinion C is half the number of those in D, consequently the valve, when driven off the engine-shaft, rotates at half the engine speed, as is usual in the case of a four-stroke engine. The top of the exterior portion of the rotating valve has cast on it a number of cooling ribs, and, as these rotate with the valve, they assist in cooling on the principle of a fan. To hold the valve in position the bridge piece F is provided carrying a ball thrust bearing and a coil spring which always keeps the valve on its seat. Although only one port is shown in the sectional drawing sent to us, the patent specification of a similar engine, though water-cooled, shows the exhaust and inlet ports arranged at an angle of 90 degrees. There is no reason why an air-cooled engine should not work perfectly well. The only real difficulty in connection with all valves of this description on air-cooled motors is whether they can be kept sufficiently cool and lubricated to enable the parts to rotate at high speed, keep gastight, and prevent jamming or seizing.

Our report of the above run, together with results and artists' impressions, were published in last week's issue. One or two competitors have related their experiences which we publish, also some supplementary general news concerning the first winter trial, which by general consent proved a most severe test of endurance.

HUGH GIBSON'S EXPERIENCES.

George Wray and I started in pouring rain, and I breathed a prayer of thankfulness that my belt was perfectly protected from the mud. Lying on the road at various points we saw a tin of oil, a pair of goggles, an electric lamp, an acetylene lamp, a pair of overall trousers, a mackintosh coat, a generator, front mudguard, cap, top of a generator, a tin of carbide, and many small objects unrecognisable. Troubles began with generator tubing near Basingstoke, and we came to a stop on the hill at Westbourne Priors, but we had company, as we noticed several singles and two sidecar machines with two-speed gears also failed. I reached the top solo, and climbed up the long drag approaching Salisbury in pouring rain and a strong head wind. Wray hopped out on one hill, and I drove on for two miles before noticing his absence, when I returned and picked him up.

Though a clean ascent of the hill from Crewkerne was made, I failed beyond the corner on Chard. I made up for this a little later by taking my passenger up Yarcombe Hill in great style—the hill I had dreaded all along. Next morning, as we descended in the daylight, I wondered how I had done it (or rather how the engine had done it).

On the return journey sidecar combinations were well to the fore. Ollson, with no passenger and an 8 h.p. twin, cut out the pace. I got ahead up to Basingstoke, where I stopped for petrol, and from there to the finish was a dour struggle between four of us to reach Hounslow first. Ollson easily led. We just kept our nose in front, and reached Hounslow at 5.50, being the first passenger-carrying machine to finish. Our gear was 5¼ to 1. The machine weighed 195 lbs., sidecar 78 lbs., passenger and driver 18½st., and spares, etc., 24 lbs. We used a Stanley 1in. belt, with a Stanley ⅞in. belt for low gear; R.O.M. tyres, F.R.S. and Lucas lamps, and Carbic generator. Had the cold been greater and the rain continuous I do not think twenty riders would have finished.

ROY WALKER'S TALE OF THE RUN.

There was quite a miniature Babel in the yard of the Bell Hotel at Hounslow on Boxing Day. Most of the old hands had come prepared to the last detail, and had their last meal before starting at their leisure. Having been fine all day, it started raining about 6.30 p.m., and Jeremiahs prophesied snow. There were also reports of 3ft. of flood water on the road at Wilton, and the burly McNab was speedily chartered as a sort of Charon to ferry competitors and machines across this miniature Styx.

We were off at last, though starting a fixed-gear machine is no joke when one is loaded with heavy clothes and can hardly get a foothold on the grease.

Luckily the rain did not last very long, and we had a foretaste of what was coming west of Salisbury before we got to Staines. Steering a straight course over the ruts seemed almost impossible. Much the simplest way seemed to be to get behind a man who knew the road and had a good lamp and to let him make the pace. Many of the riders, including the numerous Bradbury contingent, had red glass reflectors in their back number plates, and it was quite amusing and rather disconcerting to see these dodging about from side to side.

The roads improved when the gravelly stretches round Bagshot were reached, and there was quite a crowd to see us at Sandhurst. Both the railway level crossings were open, and so Hartford Bridge flats were reached without delay, and here we met a strong head wind, which lasted all the way to Exeter. There was no question of "blinding" along this famous straight three miles; it took something over one-third throttle to keep going at 25 m.p.h.

The new 3½ h.p. Rudge-Whitworth had done a non-stop to Basingstoke, where nearly everyone stopped for petrol. The time schedule of just over 15 m.p.h. was a very modest one on this easy section, always provided one had no trouble, and nearly everyone was a long way before time.

The road was rather tricky after Basingstoke, and there was a lot of "konking" on the hill after the cross roads at Hurstbourne Priors, near Whitchurch. Many new 1911

M.C.C. LONDON-EXETER-LONDON RUN.

H. F. Millar (5-6 h.p. 4-cyl. F.N.) passing through Shafteshury (229th mile). Note the footboard screens.

A. W. Brittain and A. V. Deacon on Bradburys arriving at Salishury on the return journey.

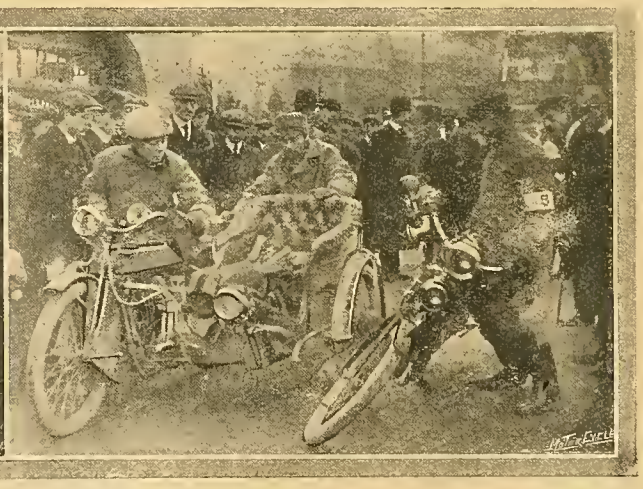
models had only been delivered to their owners a day or two before, so the engines were not run in, and got hot with the prolonged running on a low gear.

The turnings at Andover would take some finding in the dark without crowds to point the way, and the next obstacle was the miles of unrolled stones on Salisbury Plain, which nearly proved my downfall on the return journey, and of which more anon. W. Cooper, on his new T.T. Bradbury, and F. A. McNab, on his Brooklands Trump-J.A.P., were among the first arrivals at Salisbury, ahead of schedule time. The accommodation and catering at the Angel Hotel were quite good, and a two hours' respite was very welcome. It was grisly work turning out in the wee sma' hours for the dreaded ninety miles to Exeter. Wilton was practically under water, but there was a narrow path available between the floods. Soon after this, in a blinding storm, about twenty riders lost their way, and went chasing round and round some baronial park. This seemed to have innumerable lodge gates and roads like a maze, as they always brought us back to a steep, narrow, and skidsome hill with a kind of triumphal arch half way up it. The idea that the modern 3½ h.p. single will climb any hill received a rude shock hereabouts, and many of us envied the rider of the two-speed Scott, which seemed rather to enjoy single-figure gradients with hairpin bends and ploughed-field surfaces.

At the end of an hour we nearly fought about which turning was the right one, but finally we struck the main road, and had only to follow the telegraph wires. After replenishing at Yeovil the real climbing commenced. The Rudge took me up Crewkerne hill without my recognising it, but, like many others, I stuck on Chard on slowing up at the fork in doubt as to which road to take. I was soon reassured by J. Holroyd and A. E. Catt, and took it flying on going down for another shot. The next item was Yarcombe, which struck me as a far harder hill to tackle in the dark than Chard, owing to the numerous sharp bends, including the horseshoe curve, which brought me off as I let her rip, thinking I was round it. I managed to hold the machine up during its short career along a boulder-strewn gutter, but strained an old football shoulder in doing so. A very waning moon rose hereabouts, and I finished the last bit into Exeter by its light and that of a small electric lamp, as my acetylene plant struck work. The last mile or so with its greasy tramlines was about the worst on the whole run, and the long-expected breakfast did not seem up to much after our long fast.

The return journey was a contrast to some of the nightmare experiences in the dark. The sun shone, and a strong wind behind our backs tried to dry the roads, but made them more treacherous than ever in places. I think most

C. C. Cooke (3½ h.p. free engine Triumph) about to leave the Salisbury control. He ran most regularly throughout.



Almost a collision! H. G. Bell (4 cyl. F.N.) just snatches his machine away as L. A. Baddeley (7 h.p. Indian and sidecar) starts off.

M.C.C. London-Exeter Winter Run.—

riders went slower near Exeter, when they could see the grease and ruts, than they did in the dark. H. G. Bell's four-cylinder F.N. was very fast and marvellously steady, probably owing to its smooth torque and its low gear; he was about the first arrival at Exeter. There were a good many failures on the hills again, especially at Shaftesbury, and it was evident that many were feeling the gruelling they had received during the night. Some of the big twins with sidecars went at a rare pace, though the single-geared ones had a rough time of it. Hugh Gibson's 3½ h.p. single-speed belt-driven Bradbury, which was minus pedals, went magnificently; the End-to-end sidecar record holder and his lightweight passenger, George Wray, want some beating as a sidecar team. Both this machine and George Brough's had some very clever mud-shields and belt-guards. All was plain sailing to Salisbury compared with the night journey, and most of us had nearly two hours for lunch.

The Final Stage.

The first man left for London at 2.30 p.m., and all were anxious to get home before lighting-up time. This left about two and a half hours for over seventy miles. The roads were awful both sides of Salisbury, but everyone went at a rare bat over the straight and undulating stretch over the downs, which was covered with patches of unrolled stones. One of these gashed my back tyre right through the wall from the tread to the beaded edge. I mended the hole in the tube with a large Patchquick and applied a gaiter, inside which seemed to hold all right. However, the tube burst again in another place, and the tyre rolled right out of the rim and jammed in the back stays while I was going "all out." I managed to pull up after knocking lumps out of the banks on both sides of the road, and it certainly looked all up with my chances of finishing at all. A butt-ended tube was fitted and bolstered up with surgical plaster wrapped round and round it to support the weak place in the cover. Luckily the bulge just cleared the frame, and precarious progress was made to Basingstoke, after borrowing an old cover from a good Samaritan in the shape of a stranded sidecarist. This seemed to act as a mascot, and the only way to carry it was round my neck, like a life-belt, which elicited jeers from the yokels, who thought I had got left in the "race." "It never rains but it pours," and lamp troubles and frozen ruts made it impossible to reach Hounslow by 7 p.m. It was enough to try the patience of Job to be knocked out by a series of troubles which were in no way the fault of the machine itself after the coveted gold medal seemed a certainty, always barring the unforeseen mishaps which may prove anyone's undoing. I finally reached Hounslow about half-past eight, after a vain attempt to make up time by a "blind" over the frozen ruts; this nearly ended in an end-on collision with a big Daimler car which, with its dazzling bead lights, was travelling the other way at about 35 m.p.h.

The Equipment Detailed.

I had a special magneto shield and another for the carburetter, and never had a misfire the whole way or had to open the tool kit for the mechanical parts of the Rudge. The swinging crank arrangement proved a boon and a blessing, as it provided an alternative position for the feet and enabled one to "rise in one's stirrups" over the bad bumps. The spring forks proved most efficient, and were quite free from any backlash in the steering, which may have partly accounted for the freedom from skids, as I found that a very lively bat was possible over the most appalling surfaces. The same Lyso belt was used throughout, and never slipped in the wet.

The question of clothing had been carefully considered, and my kit consisted of one of the woollen Dunlop Balaclava helmets, which are warm and light and do not give one a headache. I had a thick pair of shooting boots, silk socks and long stockings over these, a pair of thick mackintosh overall trousers, an immense quantity of underclothes, and a long woollen waistcoat, with an old leather coat, two silk mufflers, and an umbrella coat to put over the lot in case of heavy rain. This little lot kept me quite warm and dry throughout, but everything was drenched with perspiration at the finish. Of course mackintoshes are non-porous and non-ventilating, so must be unhealthy on this account. It is a pity some of the armchair critics who do non-stops every time—on paper—do not compete in these trials, and they would be less free with their caustic criticisms. It is very easy to say "Why on earth didn't So and So get through, and what made him stick on Shaftesbury Hill on the return journey?" but the only marvel was that such a large percentage finished. When all is said and done, the best of machines and riders require a certain amount of luck. Well, here's success to the next winter run.

By W. COOPER, WHO SET THE BALL ROLLING.

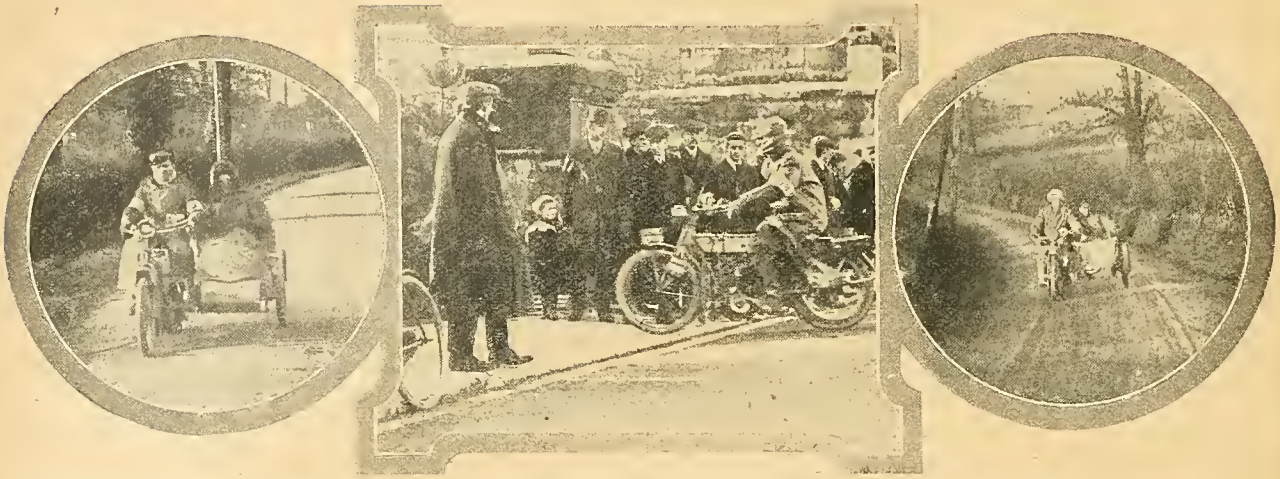
There is not the slightest doubt this event has caused a great deal of enthusiasm among the sporting motor cyclists, which was fully illustrated by the number of spectators at the start. I was one of the earliest starters, and so fortunately had a clear road, but although I have been over this route a good many times in daylight, riding by night is quite a different thing, which I soon found out. When going through Bagshot I was passed by a press representative, and soon after missed my way, but succeeded in arriving in Basingstoke almost to schedule. The roads now were getting in a very bumpy and loose condition, which caused me to lose my electric lamp. The first stop at Salisbury was made more welcome by my meeting an old chum, Harry Bell, who had arrived first, and we both sat down and made short work of a sumptuous supper. While taking in supplies at this town (not for the inner man), I had the unpleasant experience of having the attendant pour lubricating oil into my petrol tank, but this difficulty was soon overcome with the help of my old friends Harold Cox and S. C. Perryman, who had ridden over from Birmingham.

After leaving Yeovil I saw several competitors in trouble, including the weather-proof rider A. E. Catt, who was struggling with tyre trouble. There is no question Chard and Yarcombe proved bugbears to many of the riders, and I must admit that, meeting these hills in the dark and on a heavy road, it is little to be surprised at. I noticed Roy Walker, to whom I gave a hearty cheer, was also in trouble. Leaving Bagshot, I overtook several other competitors, and was pleased to see the way Hugh Gibson and George Wray climbed Yarcombe, as they had a fixed gear and sidecar. Another creditable performance, I consider, was Dear, on his 1½ h.p. Wanderer.

W. Cooper, who first proposed a 24 hour winter run in the correspondence columns of "The Motor Cycle." Photographed at Salisbury.

For the return journey from Exeter the weather turned out very fine, but unfortunately the wind veered round to the north, and blew very strongly from this direction all the way home. Bell and I took the lead into Shaftesbury, where, on the hill, a number of spectators gave us a hearty cheer, and, after some further trying roads to Salisbury, we received a good reception and welcome dinner. After leaving Salisbury it was a very pleasant ride across the plain, but on reaching Basingstoke we encountered ruts and grease again, and a number of competitors complained of side-slip. At Bagshot I replenished with petrol, and, in company with two other competitors, finished the ride, once more in the dark, to Hounslow, where we received a welcome by Messrs. R. Head and F. J. Jenkins. My 1911 Bradbury, which was only delivered a day or two before the run, gave no trouble."

M.C.C. London-Exeter Winter Run.—



E. W. Brighten (8 h.p. Chater-Lea and sidecar) approaching Chard.

F. C. Dee (5 h.p. V.S.) entering the County Hotel at Salisbury.

L. A. Baddeley (7 h.p. Indian and sidecar) at daybreak.

HOW SAM WRIGHT FARED.

I started from Coventry at 2 p.m. on Boxing Day, intending to ride to Hounslow, then complete the twenty-four hours run of the M.C.C., returning home immediately at the conclusion of that event by road. I duly reached Hounslow after a fine run in ample time for the start, and was at once struck by the cheery mood of the competitors assembled; in fact, a more jovial set of fellows I never met. Few complained of cold, and I fancy many had prepared for more severe weather. What struck me more than anything on the run was that most of the competitors had very noisy machines; I fancy some of them had been busy making holes in the silencer. The darkness, to my mind, rendered the test so severe. It is a great strain to have one's nerves at the highest tension, all the time keeping a sharp look-out for obstacles. I experienced no trouble except that I came to an abrupt stop in attempting to climb a bank, owing to being dazzled by the lights of the Thames car. W. H. Wells, one of the passengers, had to extricate me from the ditch. The grease was very sticky, and I saw many sliding about. I passed several on Chard Hill in trouble, and I think it is safe to say that only one or two single-geared machines got up at all through misjudging the gradient in the dark. We were all glad when dawn broke, ten miles from Exeter. Many of the competitors had two lamps and two generators. I relied upon one good lamp and generator, which sufficed.

After breakfast at Exeter I restarted in company with J. R. Haswell, but had only got four miles when I noticed something wrong with my front wheel, and, dismounting, I found a number of balls broken in the front hub. Returning to Exeter in company with Holroyd, who had suffered continual tyre troubles, I made a tour of the city to find a motor agent, and, having at last obtained the requisite balls, dismounted the wheel and fitted them. When I finally left Exeter I was two and a half hours behind time! Naturally, I lost no time, and with the engine pulling splendidly and the roads having dried with the cold wind and frost I was fast reducing the distance separating me from the string.

At Salisbury I learned that the last competitor had left ten minutes before I arrived. This was cheering news; in fact, so cheering I decided to forego lunch and continue. Another fifty miles, and I at last began to overhaul the stragglers. All seemed anxious to cover as many miles as possible before darkness came on, with the result that the pace over the Salisbury Plains was somewhat warm, but my two-speed Humber easily held its own. At Basingstoke I came upon some of the riders lighting up, so I dismounted and did likewise. We had now only thirty-six miles to cover, and, all going well, I finished at Hounslow with plenty of time to spare. I was impressed with the absence of lamp troubles generally, but I passed a number tyre repairing. My only troubles were in connection with the hub already mentioned and a broken mudguard stay. Re-mounting, I rode to Euston, deciding to complete the return journey to Coventry by train, as I was quite satisfied with 430 miles on end.

OFFICIAL RESULTS.

50 GOLD MEDAL WINNERS.

JOURNEY COMPLETED WITHIN TWENTY-FOUR HOURS.

W. Cooper (3½ Bradbury).
H. Karslake (4 Dreadnought).
C. C. Cooke (3½ Triumph).
L. A. Baddeley (7 twin Indian and sc.).
H. G. Bell (5 four-cylinder F.N.).
Eli Clark (2¾ twin Douglas).
A. J. Stevens (2½ A.J.S.).
J. Stevens (2½ A.J.S.).
V. Olsson (8 twin Oxted-J.A.P. and sc.).
F. C. Dee (5 twin V.S.).
A. Hill (3½ Rudge-Whitworth).
S. Webb (3½ Bradbury).
H. A. Cooper (3½ Bradbury).
W. F. Guiver (3½ Kerry-Abingdon).
F. Thomas (6-7 twin G.O.K.).
J. W. Woodhouse (3½ Calthorpe).
R. O. Clark (2¼ F.N.).
A. J. Sproston (5 twin Rex).
L. Browne (3½ Bradbury).
H. Gibson (3½ Bradbury and sidecar).
H. F. Millar (5-6 four-cylinder F.N.).
E. W. Brighten (8 twin Chater-Lea and sidecar.
A. V. Deacock (3½ Bradbury).
A. W. Brittain (3½ Bradbury).
C. Patteson (2⅜ twin Moto-Rêve).
W. Hornsby (4 Cheviot).
D. Ellis (3½ Calthorpe).
E. B. Ware (8 twin Chater-Lea and sc.).
G. Brough (3½ Brough).
W. Watson (7-9 twin Chater-Lea and sc.)
A. J. Moorhouse (3½ Rex).
A. Baker White (4 Trump-J.A.P.).
R. G. Mundy (3½ Triumph).
F. A. McNab (3½ Trump-J.A.P.).
G. Griffith (2⅜ twin Moto-Rêve).
J. R. Brown (3½ Lincoln Elk).
H. R. Purchase (2½ A.J.S.).
H. F. S. Morgan (8 twin Morgan Runabout).
J. R. Haswell (3½ Triumph).
S. Wright (3½ two-speed Humber).
G. W. England (2¾ twin Moto-Rêve).
H. Greaves (2⅜ twin Enfield).
B. C. North (3½ Ariel).
C. B. Duberly (3½ Ariel).
H. Collins (8 twin Bat).
N. C. Dear (1½ Wanderer).
A. E. Catt (3½ Triumph).
A. C. Teesdale (3½ Ariel).
S. Sawer (3½ Premier).
W. L. Hemy (3 twin Wanderer).

3 SILVER MEDAL WINNERS.

JOURNEY COMPLETED WITHIN THIRTY HOURS.

A. C. Robbins (3½ two-speed Humber and sidecar).
E. Kickham (2¾ twin Douglas).
Roy W. Walker (3½ Rudge-Whitworth).

M.C.C. London-Exeter Winter Run.—

SOME PERSONAL PARS.

W. Cooper was the first man off on his new T.T. Bradbury, and lost his way after Salisbury going down. He was upbraided by his companions in misfortune, who thought he was on intimate terms with every puddle and stone on the road. His machine had an attack of "Konkitis" hereabouts, and he was late at Exeter, where his loud demands for breakfast at once if not sooner caused some merriment. However, he went great guns afterwards.

There is not the slightest doubt that the Winter Run will be an annual event, for everybody seemed most enthusiastic over it.

Holroyd punctured at Blackwater, and put in a new butt ender, which immediately blew out at the ends through faulty fitting. Got going after a repair, but was reported in trouble near Honiton, and found asleep on the roadside. He ultimately reached Exeter about 9.30 a.m. and retired.

E. B. Dickson, on trying to mount his Indian at Yeovil on the outward journey, missed the pedal and fell over the machine. He bent one crank right up and broke the front footrest, which forms one of the engine lugs. He pluckily went on to Exeter, where he decided to return by train. He also reported the clutch burnt out and machine skidding badly, which he thought was partly due to the front wheel having been rebuilt out of centre with the hub.

A number of generators, lamps, belts, etc., were shaken off machines, especially between Hounslow and Salisbury, several losing the lower half of the generator only. Nobody appeared anxious to stop and retrieve anything.

MacNab (who—as well as the other Trump riders—relied upon one Hellesen dry cell) broke his belt several times, and ultimately borrowed one from another competitor at Salisbury. He climbed Shaftesbury Hill very fast.

Bell practically led the field from Salisbury to Exeter, arriving after a non-stop run at the former city at 10.9. At 5.30 a.m. at Exeter he had to wake up the people at the Bude Hotel. The checker, who was sleeping in the hotel, threw open the window in great alarm on hearing Bell's hooter, and on finding a competitor rushed back for his watch to take the time.

The last ten miles into Exeter was by far the worst of the whole route—and pot-holey. Fortunately, day broke immediately before this stretch was reached.

Three ladies, Mrs. Robbins, Mrs. Watson, and Mrs. Brighten, accompanied their husbands in sidecars, and showed the greatest enthusiasm over the run. Mrs. Brighten also accompanied her husband on the London-Edinburgh Run last year.

Three End-to-end record holders—A. J. Moorhouse, Hugh Gibson, and Eli Clark—were among the successful competitors. The specially large front mudguard on the latter's machine proved wonderfully efficient, and received universal praise.

The Wanderer motor cycles performed most creditably. Two were entered and both got gold medals. The 1¼ h.p. ridden by N. C. Dear was the smallest engine in the trial, and, we are assured, went through without a mechanical stop, and took every hill but one on both the outward and homeward journeys without pedal assistance. The 3 h.p. Wanderer ridden by W. L. Hemy is also said to have made a non-stop run.

Karslake's Dreadnought had a wide metal screen from the head right down under the engine and footboards, which proved most efficient. His machine also had the most perfect lighting arrangements—an F.R.S. 1911 head lamp with back door and two generators, a Cox-Walker double electric head light, and a swivel inspection lamp on the valve side of engine. The rider also carried an inspection lamp fixed round his waist. These were all run off a large Siemens dry battery fixed on the carrier.

A patch of unrolled stones at Wilton caused many a heart flutter. Many similar patches were encountered on Salisbury Plain, but as they were scattered about riders could dodge them.

Two riders at least had no food at Exeter, for they were met by riders who had completed the first five miles of the return journey.

The 2¾ h.p. Enfield, successfully ridden by H. Greaves, was one of the new two-speed chain driven twins which made their *début* at Olympia.

Riders found some difficulty in passing each other on account of the headgear worn, which prevented a hooter from being heard, and naturally competitors kept as much as possible to the middle of the road.

W. H. Elce (5 h.p. Rex and sidecar) was most unfortunate. At Bagshot, fourteen miles from the goal, he was forced to retire with a seized piston, caused by broken piston rings.

H. A. Thompson, who drove an 8 h.p. Crowsley Cycar with J.A.P. engine, got to Sherbourne, near Yeovil, without trouble, when an old chain fitted temporarily gave trouble. He awaited daylight to effect a repair, but lost so much time that he turned round and drove back, reaching town, after a good run, before dark.

We are asked to acknowledge the good work of F. Hansford for directing riders at Crewkerne in the night, and checking them at Windwistle, also to the Automobile Association for having six men out with lamps at various points. The marking at Shaftesbury (in the hands of the Central Garage) was very effective.

J. Robertson Brown rode a Lincoln Elk, which he had tried for only ten miles previously. It was, moreover, his first competition, but he climbed Chard without pedalling, except for the last thirty yards. Yafcombe Hill was taken without a falter. He was before time at every control, and had seventeen minutes to spare at the finish.

George Brough did not ride his 3½ h.p. single, as he had sprained his ankle some time previously. He got through on a borrowed 5 h.p. twin Brough and sidecar, in spite of trouble with the two-speed gear and losing a bolt from the front sidecar clip, which caused the sidecar to sag dangerously. He had rigged up a very clever metal belt shield, and an original pair of handle-bar muffs.

R. C. Owen-Wells, B.A., writes that he failed simply because he did not know how to tighten the spring clutch of his P. and M.—an adjustment he now finds easy. He only took delivery of the machine two days before the run. Mr. Owen-Wells and his passenger did get to Exeter, and returned as far as Basingstoke by 7.15 p.m., but gave up there, as the gold medal was impossible.

A. C. Robbins, who is a keen amateur rider of a 3½ h.p. two-speed Humber, made the journey with Mrs. Robbins as passenger in the sidecar. This machine climbed all the hills they met, travelling for miles on the low gear, and on no occasion whatever was it necessary to shed the passenger, as Mr. Robbins informs us was the case with at least one single-geared machine and passenger attachment. Unfortunately, on his way back he lost his way, and was so much delayed that he took 25½ hours to cover the distance.

A. L. Ommanney, who was riding a 3½ h.p. Trump-J.A.P., was unfortunate enough to fail to win a gold medal through breaking a belt fastener at Egham, only seven miles from Hounslow. To add insult to injury, the breakage occurred exactly opposite a garage, in the window of which were both fasteners and belts. Owing to the fact that it was a holiday, Mr. Ommanney was unable to get anyone to open this shop nor any other garage in Egham, although it was only about 7 p.m.

The Year's Motor Cycle Records.

It has been our custom in previous years to publish a list of motor cycle records in the beginning of the new year, and below we give those which still stand and those which have been altered during 1910. It is worthy of notice that none of the old Continental records have been changed during last year, and only one British record for any size of machine, viz., the mile flying start, which now stands to the credit of C. R. Collier. The class records have undergone many changes, principally in classes A, D, and E, whilst the alterations in British records for 76×76 mm. engines are all flying start records from two to five miles in distance. For this list we owe an acknowledgment to Mr. F. Straight, Secretary of the Auto Cycle Union, from whose record book the figures have been obtained.

1910 BRITISH RECORDS.

Distance	Time.	Holder.	Track.	Date.
kilos.	h. m. s.			
1fs.	25⅗	H. Cissac	Blackpool	July 27, '05
1ss.	35	,,	,,	,,
mls.				
1fs.	43⅖	C. R. Collier	Brooklands	Aug. 17, '10
5fs.	4 58⅖	G. A. Barnes	Canning Town	July 14, '03
1ss.	50⅕	H. Cissac	Blackpool	July 27, '05
2	2 5⅘	C. R. Collier	Canning Town	June 4, '06
3	3 5	,,	,,	,,
4	4 8⅗	,,	,,	April 16, '06
5	5 12	,,	,,	,,
10	10 26⅖	,,	,,	May 28, '08
20	21 16⅖	,,	,,	Oct. 11, '06
30	31 54⅘	,,	,,	,,
40	42 37⅕	,,	,,	,,
50	48 25⅖	H. V. Colver	Brooklands	Oct. 9, '09
60	1 11 28⅖	H. A. Collier	Canning Town	June 27, '06
70	1 23 12⅖	,,	,,	,,
80	1 34 56⅖	,,	,,	,,
90	1 50 59⅘	,,	,,	,,
100	1 39 4⅕	H. V. Colver	Brooklands	Oct. 9, '09
150	2 58 56	H. Martin	Canning Town	Feb. 15, '09
200	4 5 54⅖	,,	,,	,,
300	6 6 28	H. A. Collier	,,	May 5-6, '09
hrs.	mls. yds.			
1	68 1380	C. R. Collier	Brooklands	Oct. 8, '08
2	118 719	H. V. Colver	,,	Oct. 9, '09
3	165 936	H. Martin	,,	Nov. 22, '09
4	194 1320	,,	Canning Town	Feb. 15, '09
5	245 640	H. A. Collier	,,	May 5-6, '09
6	294 800	,,	,,	,,
12	471 784	,,	,,	,,
18	611 330	,,	,,	,,
24	775 1340	,,	,,	,,

1910 CONTINENTAL RECORDS.

Distance.	English Equivalent	Time.	Holder.	Track.	Date.
kilos.	mls. yds.	m. s.			
1fs.	1093⅗	25⅘	J. Giuppone	Ostend	July 14, '06
5fs.	3 188⅕	2 45⅕	,,	Salon Road	Sept. 18, '06
10fs.	6 376⅖	5 49	,,	Parc des Princes	Sept. 2, '06
1ss.	1093⅗	33⅕	J. Olieslagers	Antwerp	June 24, '09
2ss.	1 427⅕	1 6⅖	,,	,,	,,
3ss.	1 1521	1 41⅖	,,	,,	,,
4ss.	2 854⅖	2 17	,,	,,	,,
5ss.	3 188⅕	2 52⅘	,,	,,	,,
10ss.	6 376⅖	5 34⅘	J. Giuppone	Parc des Princes	Dec. 9, '05
20ss.	12 753⅕	11 21⅖	,,	,,	,,
30ss.	18 1130	17 14	,,	,,	,,
40ss.	24 1506⅖	23 8⅖	,,	,,	,,
50ss.	31 123⅕	29 1⅖	,,	,,	,,
60ss.	37 500	34 57⅖	,,	,,	,,
70ss.	43 876⅖	40 54⅘	,,	,,	,,
80ss.	49 1253	46 51⅕	,,	,,	,,
90ss.	55 1630	52 45⅖	,,	,,	,,
100ss.	62 246⅖	58 38⅘	,,	,,	,,
mls.	kils. metre				
1fs.	1 609	56⅖	A. Anzani	Vel d'Hiver.	Dec. 23, '06
1ss.	1 609	53⅘	H. Cissac	Dourdan	Oct. 8, '05
hrs.	mls. yds.	kils. m.			
1	63 1078	102 368	J. Giuppone	Paris	Dec. 9, '05
2	77 754	124 600	A. Anzani	,,	July 13, '03
3	114 1326	184 666	,,	,,	,,
4	146 1364	236 200	,,	,,	,,
5	184 636	296 666	,,	,,	,,
6	220 529	354 430	,,	,,	,,
12	434 425	698 900	,,	,,	,,
*1	56 1685	91 665	R. Thomas	,,	Mar. 10, '06
†1	59 801	94 73	A. Pernette	,,	,,

Pending an agreement between the A.C.U. and F.A.M., all world's records are in abeyance. *Third of a litre. †Under 110 lbs.

1910 BRITISH CLASS RECORDS.
(At Brooklands.)

CLASS A. (Maximum Capacity, 275 c.c.)

Distance and Time.	Holder.	Date.
1 kilo. fs. 42.47s.	W. Chitty	Aug. 17, '10
1 mile 1m. 9.38s.	,, ...	,,
1 hour 36 mls. 350 yds.	W. Smith	May 19, '09

CLASS B. (Maximum Capacity, 350 c.c.)

1 kilo. fs. 32.76s.	H. Martin	Aug. 17, '10
1 mile 54.57s.	,, ...	,,
50 miles 1h. 23m. 54s.	F. W. Dayrell ..	Oct. 9, '09
1 hour 47 mls. 1,206 yds.	,, ..	Aug. 18, '09

CLASS C. (Maximum Capacity, 500 c.c.)

1 kilo fs. 34.403s.	H. H. Bowen....	July 14, '09
1 mile 56.902s.	,, ...	,,
50 miles 49m. 59⅘s.	O. C. Godfrey ..	Nov. 24, '09
100 miles 1h. 50m. 22s.	J. Marshall	June 22, '10
1 hour 59 mls. 1,350 yds.	O. C. Godfrey ..	Nov. 24, '09

CLASS D. (Maximum Capacity, 750 c.c.)

1 kilo fs. 29.78s.	F. H. Arnott ..	Aug. 17, '10
1 mile 49.26s.	F. H. Arnott .. / J. T. Bashall ..	,,
50 miles 45m. 45.8s.	S. A. M. Whitham	June 22, '10
100 miles 1h. 37m. 13.8s.	J. T. Bashall ..	,,
1 hour 62 mls. 1,300 yds.	..	,,

CLASS E. (Maximum Capacity, 1,000 c.c.)

1 kilo fs. 26.35s.	C. R. Collier ..	Aug. 17, '10
1 mile 43.57s.	,,	,,
50 miles 48m. 25s.	H. V. Colver	Oct. 9, '09
100 miles 1h. 39m. 4⅕s.	,,	,,
1 hour 68 mls. 1,380 yds.	C. R. Collier ..	Oct. 8, '08

British Records for Motor Bicycles with a bore and stroke of 76×76 mm., or equivalent.

Distance.	Time.	Holder.	Track.	Date.
mls.	m. s.			
1fs.	1 2	C. R. Collier	Canning Town	Aug. 10, '07
2	2 10	H. Martin	,,	May 11, '10
3	3 14⅕	,,	,,	,,
4	4 19⅗	,,	,,	,,
5	5 26	,,	,,	,,
1ss.	1 16⅘	C. E. Bennett	,,	Aug. 10, '07
5	5 40	,,	,,	,,
9	10 11	H. V. Colver	Stadium	Aug. 22, '08
10	11 24	C. E. Bennett	Canning Town	Aug. 10, '07
15	16 59	H. V. Colver	Stadium	Aug. 22, '08
20	22 58	C. E. Bennett	Canning Town	Aug. 10, '07
24	27 9	H. V. Colver	Stadium	Aug. 22, '08
30	33 58⅘	,,	,,	,,
40	47 12⅘	C. R. Collier	Canning Town	July 13, '07
45	50 56⅘	H. V. Colver	Stadium	Aug. 22, '08
50	58 31⅘	C. R. Collier	Canning Town	July 13, '07
51	57 48	H. V. Colver	Stadium	Aug. 22, '08
hr.	mls. yds.			
1	52 1650	H. V. Colver	Stadium	Aug. 22, '08

The list of motor cycle records accepted in the U.S.A. and existing at the end of last year has not yet reached us, but we are in communication with the Federation of American Motor Cyclists on the matter, and the tabulated list as approved by the governing body of motor cycling in America will be published as soon as it is received.

The London Centre Quarterly Trial Course.

Starting Point: Croydon. Luncheon Stop: Hastings. Three Severe Hills included.

ON the last day of the old year a special committee appointed by the Auto Cycle Union was driven round the course chosen for the London Centre Quarterly Trial, which is to take place on Saturday, the 21st inst. This committee consisted of Messrs. J. W. G. Brooker, H. G. Cove, E. M. P. Boileau, and V. Hart, who, accompanied by Mr. H. J. Densham, a former member of the A.C.U. Committee, surveyed carefully the whole route. At a previous meeting a fairly stiff course south of London was selected, but the first difficulty which presented itself was that of discovering a good starting point near London, at which a good hotel was situated. It was decided, however, provisionally to select the Swan and Sugar Loaf at Croydon, which is quite near the end of the ten mile limit.

Croydon the Starting Point

Leaving the starting point, the competitors follow the well-laid tramlines to Purley, and at the first road fork bear to the left, and then to the left again entering the main Lewes road. This is followed till Warlingham Station is reached, where a sharp turn to the left is taken under a railway bridge, and round to the right. As the corner is on a severe up grade, and is followed by a long and rather steep hill, the picking up powers of the engines will be well tested.

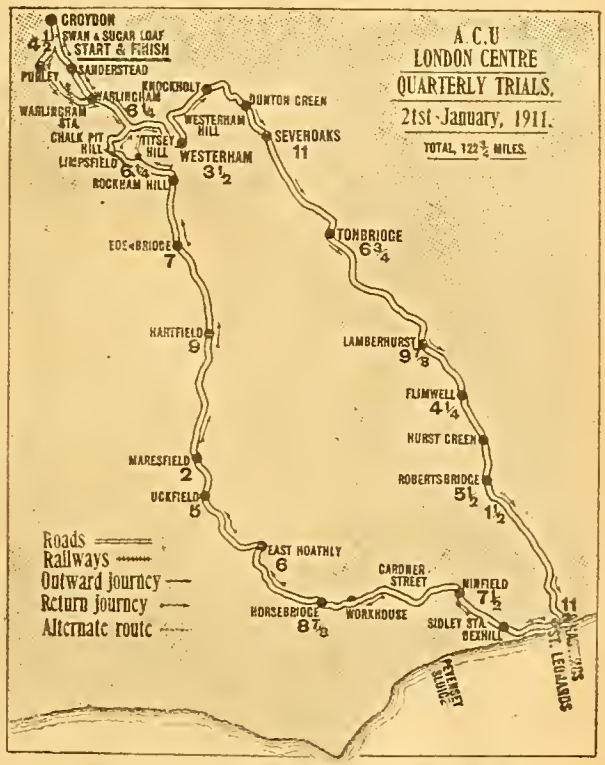
On reaching the top of the hill the men proceed to Warlingham, where they turn to the right and follow the signposts to Westerham, entering that village after descending a long declivity. The entrance to the village is dangerous by reason of the sharp corners, and care must be exercised. In the village the men turn to the left, and, passing the station, ascend the far-famed Westerham Hill. Leaving the summit they turn to the right and follow the signposts and A.C.U. arrows to Dunton Green, where the main Hastings road is joined. Thereafter all is plain sailing, and the road is unmistakable through Sevenoaks to Tonbridge. On leaving this town a church is seen on the right, and opposite is an inconspicuous signpost indicating the road to Hastings.

At St. John's Cross beyond Robertsbridge the left-hand fork is taken, and Hastings is reached by a fine road, including one steep hill. The approach to the town is bad, owing to paving, etc., on the tramlines. Lunch will be in readiness at the Queen's Hotel, facing the sea.

Route for the Return Journey.

Leaving Hastings, the men follow the tramlines along the parade and make their way to Ninfield. All is straightforward for some miles, and the road is an easy one, but care must be taken not to miss the turnings in Gardner Street, by Hailsham Union, and especially in East Hoathly. From this point on to Hartfield the road becomes more hilly, and is exceedingly pretty. It is, in fact, part of the route followed in the first A.C.U. 1,000 Miles Trials in 1903, and the steepest acclivity on this section is Crockham Hill, up which the left-hand road is taken, which conducts the men to Limpsfield. Here they turn to the left, and, skirting the village, bear right, pass Oxted Station, then under the railway take the first turning on the right and under the line again. This is a byroad which begins to make its gradient felt, and is the commencement of Chalk Pit Hill, one of the severest hills to be found near London. Its one corner is not too stiff, but the gradient is probably 1 in 5, and the surface is not too smooth. It is, however, smoother than Sutton Bank, but the surface is apt to be greasy, and if the weather conditions are such as to render the ascent unsafe the men will be sent up Titsey Hill.

The three ascents of Warlingham, Westerham, and Chalk Pit must be ascended to the satisfaction of the officials before a rider can claim a first-class certificate. At the top of Chalk Pit Hill the men turn to the right, and at the end of the road turn very sharply to the left, joining the Warlingham-Sanderstead road traversed in the morning. They, however, go straight on, bearing to the left by Sanderstead and descending direct into Croydon.



Route selected for the Quarterly Trials on the 21st inst.
N.B.—The distances are approximate only.

The new course is certainly much stiffer than the old one, and should fulfil the purpose for which it is intended, while makers are advised not to treat it too lightly. Parts of the route are difficult to find, and it is to be hoped that as the road has been carefully surveyed all the principal turnings will be marked. Competitors, however, are expected to read the road directions carefully and to acquaint themselves with the route on good maps. In cases of doubt at cross roads, riders should note the signposts and compare the directions with the route cards.

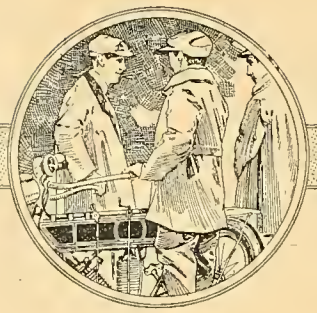
EXETER AND DISTRICT M.C.C. WINTER TRIAL.

The above club held a winter reliability trial on December 26th over a circular course, comprising a varied assortment of Devonshire roads at their worst. The weather left something to be desired, and the surface of the roads was execrable. In some parts it was almost impossible to hold up the machine, and some rather bad side-slips were suffered by one or two of the competitors. The course was Exeter-Teignmouth-Torquay-Newton-Chudleigh-Exeter, a circuit which had to be covered twice.

Out of a possible 100 marks the survivors scored as follows: J. Milner, 96; S. Saunders, 94; T. Trinaman, 91; A. Tucker, 89; J. Birdsall, 80; B. Rae, 76; R. Williamson, 74; and E. Babington, 69.

During the first round a timed hill-climb was held over one and a quarter miles of Shaldon Hill. Unfortunately, the official timing apparatus broke down, and no reliance can be placed on the accredited times. The order of finishing was: S. Saunders (3½ h.p. clutch Triumph), T. Trinaman (7-9 h.p. Bat), J. Milner (3½ h.p. Triumph), A. Tucker (3½ h.p. Triumph), R. Williamson (2¾ h.p. Moto-Rêve), E. Babington (3½ h.p. Bat), B. Rae (2¾ h.p. Douglas), and J. Birdsal (2¼ h.p. Moto-Rêve).

CURRENT CHAT



Time to Light Lamps

Special Features

(Greenwich).

Jan.	5th	... ...	5.4 p.m.
,,	7th	... ...	5.6 ,,
,,	9th	... ...	5.9 ,,
,,	11th	... ...	5.12 ,,

Good Advice.

When a strange noise is heard investigate it at once, it may be due to an empty oil tank.—*The Bicycling World and Motor Cycle Review*, U.S.A.

The A.A. and M.U. Amalgamation.

An extraordinary general meeting of the Motor Union will be held at the Hotel Cecil (Medici Room), on Tuesday next, the 10th inst., at 12.30 p.m., for the purpose of approving the action of the General Committee in recommending that the new rules of the A.A. and M.U. be adopted in lieu of the existing rules.

Advantages of Amalgamation.

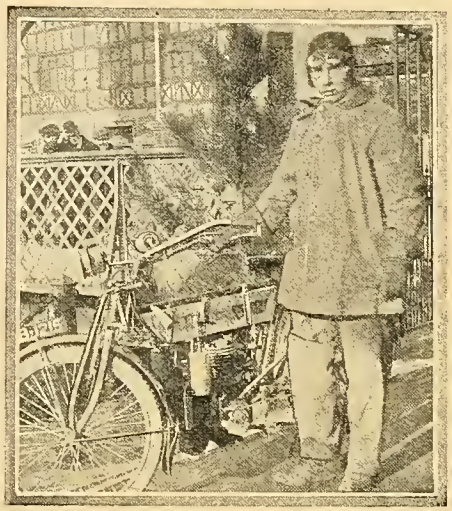
Members of the M.U. are entitled to a rebate of one guinea on the two guineas subscription of the A.A. and M.U. for three years. Pending an exchange of badges the present M.U. badge will be recognised by the patrols. *The Autocar* will continue to publish a page of A.A. and M.U. notes weekly. The car membership stands at 23,000, and the motor cycle membership at 3,000.

The Challenge to Dutch Motor Cyclists.

It will be remembered that a fortnight ago W. Cooper and W. Pratt issued a sporting challenge through *The Motor Cycle* to Dutch motor cyclists to visit Holland and compete in a reliability trial. The hon. sec. of the Dutch M.C.C.—A. Citroen, who, by the way, rides a twin Matchless-J.A.P.—has replied favourably, and his letter is published in our correspondence pages this week. It is to be hoped that an international competition will be the outcome.

Winner of Baron de Forest's £4,000 Prize.

Mr. T. Sopwith, whose prowess in aviation has recently brought him into public gaze, is an old motor cyclist, though old in experience but not in years. His first appearance in open competition was at the first A.C.U. Tricar Trials, which started from Hatfield in November, 1904. For several years afterwards he was a keen motor cycle rider, and rode countless makes of machines, Rexes, Bats, F.N.'s, a 5½ h.p. twin-cylinder Peugeot, and several others we do not recollect. In time to come it will be said of aviators even as it is now of automobilists, that to be really proficient one must graduate upon a motor cycle.



LONDON-EXETER-LONDON WINTER RUN.
A. G. Leck (3½ h.p. Brown) at Salisbury, on the return journey.

Arthur J. Moorhouse riding his End-to-end 3½ h.p. Rex. He was among the M.C.C. gold medal winners.

M.C.C. 24 HOURS' WINTER RUN: COMPETITORS' EXPERIENCES.

THE YEAR'S RECORDS.

MAGNETO POSITION.

Five Reliability Trials Last Week.

There were in all five winter reliability trials last week, viz. :

1. M.C.C. 24 hours run to Exeter.
2. N.W. London M.C.C. 12 hours run to Gloucester and back.
3. Sheffield and Hallamshire M.C.C. 12 hours run to Bridlington.
4. Harrogate and District M.C.C. run to Saltburn and Whitby.
5. Exeter and District M.C.C. tour in Devonshire.

The results of three events were given in our last issue. This week we publish the official results of all five events, some competitors' experiences, and numerous illustrations.

Exhaust Gas to Warm Handle-bars.

No one suggested using a by-pass from the exhaust pipe to warm the handle-bars in the recent winter runs. An American contemporary illustrates a device which it calls "Muffler Aids to Winter Warmth" (not patented), where the rider is depicted riding a twin-cylinder machine with a vertically arranged exhaust pipe standing well above the top of the tank; at its extremity is a silencer with the final exit of the gases impinging on the rider's chest. Two branch pipes from the central one are led to each extremity of the bars, and small silencers direct a stream of hot gas on to the hands. The sketch is, of course, a skit, but by-passes from the water circulation have been used to warm the steering wheel of a car, notably R. W. Coan's device. Why not warm the handle-bars of a motor cycle in the same way by a suitably arranged exhaust by-pass?

New Speed Limits in Sussex.

The R.A.C. announces that the application of the West Sussex County Council for ten mile speed limits has been granted in regard to the following roads: So much of Nepcote Lane as extends from its junction with the main road from Horsham to Worthing at a point near the Gun Inn to its junction with the Cross Lane at Smithy Pound; and the Cross Lane aforesaid, extending from its junction with Nepcote Lane at Smithy Pound to its junction with the aforesaid main road at a point near the Triangle. Lower Shoreham Road: So much as extends from a point situate fifty yards west of its junction with Victoria Road to its junction with Whiterock Road; and so much as extends from a point in Fishergate Terrace to its junction with Mill Road.

An Interesting Article for Next Issue.

So many competitors in the winter trials having sent us an account of their experiences, we are obliged to hold over till next week an illustrated article of special mudguarding devices and novel fitments on competitor's machines in the M.C.C. twenty-four hour run to Exeter and back.

New Quarterly Trials Course.

For the first Quarterly Trials of 1911 to be held in the Metropolitan Centre on the 28th inst., a new course embracing three stiff climbs has been selected. The start is from Croydon, and the luncheon interval at Hastings. A map of the new course and further details will be found on page 13.

Westerham.

The picturesque old-world Kentish village nestling at the foot of the precipitous hill so well-known to motor cyclists, which will be ascended by the competitors in the first Quarterly Trials of the year, is famous as being the birthplace of General James Wolfe, the hero of Quebec, who first saw the light in Westerham Vicarage on Jan. 2nd, 1727. A statue to his memory was unveiled on Monday last, Jan. 2nd, the 184th anniversary of his birth, by Lord Roberts. The competitors in the Quarterly Trials will probably be marshalled round this monument preparatory to ascending the hill.

Ninfield.

Another interesting village on the new Quarterly Trials course is that of Ninfield. As the competitors enter it after leaving the precincts of Bexhill, they will observe (*i.e.*, those who are observant) a little green on the left, under the trees on which some ancient stocks in a wonderfully good state of preservation may be discerned.

An American Invasion.

Jake De Rosier, America's leading professional, is coming to England this year to compete in the Tourist Trophy Race, and will also attempt to improve upon certain records at Brooklands. De Rosier is the big chief of the Indian racing camp, and is having a 32 h.p. racing machine built with a four-cylinder engine with the object of capturing world's speed records. The engine is in reality a 32 h.p. Indian intended for use on aeroplanes.

Regarding the T.T. Race which is the chief object of his visit, De Rosier revealed to an American press representative an ingenious system for making himself thoroughly at home on the course. He intends to go over the course for the first few times at night picking his way as best he can, after which he will take trials over the course in daylight, just to familiarise himself with the principal long distance landmarks.

"There is nothing like going over a difficult course at night for the first few times," he explains, "because one concentrates the whole attention on the course itself instead of gazing at the scenery. After making the trip once or twice at night, every inch of it is thoroughly familiar when one comes to take a daylight ride on it, and it is as easy to remember as the alphabet."

The Hour Record.

Gordon Dalziel informs us that he is about to make an attempt on the hour single-cylinder record at Brooklands with A. G. Miller at an early date. Both riders will be mounted on 3½ h.p. T.T. Premiers. How this one hour record is coveted!

FUTURE EVENTS.

Jan. —Auto Cycle Union Annual Dinner.
" 11—M.C.C. Annual General Meeting at the Inns of Court Hotel.
" 28—A.C.U. Quarterly Trials (Metropolitan centre).
Feb. 6-11—Auto-Cycle Union Lamp Trial.
" 8-11—Motor Cycle Show at Leicester.
" 16—M.C.C. Smoking Concert.
Mar. 18—M.C.C Opening Run.
Apr. 14-17—M.C.C. London - Land's End Trial and Easter Tour.
" 22—A.C.U. Quarterly Trial (Yorkshire centre).
May 13—M.C.C. Hill Climb.
" 27—Bristol B. & M.C. Open Hill Climb.

New Zealand Competitions.

The British-made Norton motor cycle has been very much to the fore in New Zealand, having lately won three hill-climbs. The first was on August 6th, at Saddle Hill, when McDonald beat all comers. There were fifteen starters. On September 9th, at Timaru, the only Norton entered won first prize out of seventeen starters. On September 24th, at the Otago Club's competition, Johnstone, on a 1909 Norton, was first in the trade class and made fastest time, and McDonald on a similar machine was first and fastest of the private owners.

Motor Cycles for Road Surveyors.

Berkshire County Council, to enable the sub highway surveyors to travel at least fifty miles a day, compared with twenty-five miles a day on ordinary bicycles, has decided to provide them with motor cycles. Already it may be observed, motor cycles are largely used by road surveyors in different parts of the country.

The Year's Records.

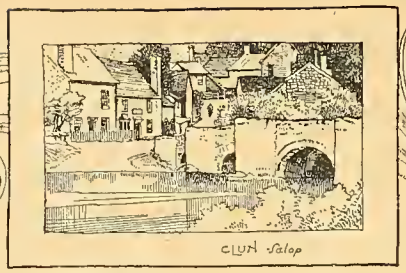
From the list of motor cycle records existing on December 31st, 1910, and published in this issue, it will be seen that there is practically a new list of British class records compared with 1909.

Hill-climb in N.S.W.

An open hill-climbing contest, promoted by the Motor Cycle Club of New South Wales, took place on the Watson's Bay hill, a stiff grade about half a mile in length, and including two bad corners. The handicaps were framed by Mr. H. W. Filmer. Result: First round: Esdaile (3½ h.p. Triumph), 4s., beat Islip (3½ h.p. Buchet), 12s.; Warner (3½ h.p. Triumph), 3s., beat Millar (3½ h.p. L.M.C.), 5s.; Reynolds (3½ h.p. Triumph), 3s., beat Skinner (3½ h.p. Kerry-Abingdon), scr.; Levi (3½ h.p. Kerry-Abingdon), scr., beat Longworth (3½ h.p. Triumph), 3s. Second round: Reynolds (3½ h.p. Triumph), 3s., beat Warner (3½ h.p. Triumph), 3s.; Levi (3½ h.p. Kerry-Abingdon), scr., beat Esdaile (3½ h.p. Triumph), 3s. Final: A. Levi (3½ h.p. Kerry-Abingdon), scr., beat W. W. Reynolds (3½ h.p. Triumph), 3s. The winner's time was 59 4-5s., and the second 1m. One of the entrants, Lucas, on a 3½ h.p. L.M.C., had the bad luck to buckle his front wheel in a trial run. He hit a post at one of the corners, which was difficult to negotiate at speed.

OPEN AIR RINKING AT WESTCLIFFE-ON-SEA.

The Council of this popular seaside resort have unwittingly provided residents and visitors with an admirable open-air rink. The roadway on the front having a fine Tarmac surface, and very smooth, has been converted into a fashionable rink, and skaters may be seen in large numbers, daily taking their pleasant exercise. There is a stretch of half-a-mile for those who are desirous of testing their speed; which should tempt roller skaters and motor cyclists to settle little differences.



CLUB NEWS

Mersey M.C.

A smoking concert and cinematograph entertainment is to be held at headquarters, St. George's Restaurant, Redcross Street, Liverpool, on Thursday next, the 12th inst., at 8 p.m. Members are invited to bring any motoring friends, and the club will welcome all local motor cyclists who are interested.

Burnley Victoria M. and C.C.

The above club had its annual dinner in the Hall Inn, when there was a large gathering of motor cyclists. The prizes which had been won during the season were presented by Mr. W. Holt. A series of very interesting lantern slides were much enjoyed by the members. Musical items were interspersed with the proceedings.

Glasgow M.C.C.

This club has decided to foregather at a dinner to take place during this month, when the prizes won during the year will be presented. Hitherto the club has held an annual smoking concert, but it is hoped that members will turn up in full force and make the first annual dinner a thorough success. Arrangements are being pushed forward for a lecture on a subject of interest to motor cyclists, and this will be held in February. These two functions will give intending members a chance of meeting present members of the club.

Proposed North Middlesex M.C.C.

Yesterday evening the inaugural meeting of the above club was to be held at the Swan and Pyramid Hotel, High Road, N. Finchley, with a view to forming a motor cycle club to be named as above. The support of a number of motor cyclists had been promised, and it was confidently expected that the club would become *un fait accompli*. A ladies' section is to be included, and it is intended to affiliate the club to the A.C.U. The promoters are Messrs. R. D. Bennett, W. S. Bennett, D. G. Blakey hon. sec. *pro tem.*, W. A. Brown, A. V. Deacock, H. C. Mills, C. L. Sanger, and G. Sanger. The Earl of Ronaldshay, M.P., has been invited to accept the post of president.

Bishop Auckland, Darlington, and District M.C.

The annual dinner was held on Wednesday, December 21st, at the Wear Valley Hotel, Bishop Auckland, when a very good number of members and friends were present. Mr. T. W. Craig, the chairman of the club, presided. After the loyal toast had been honoured, Mr. W. Harding proposed "The Club," which was responded to by Mr. R. B. Thompson, the secretary, and also Messrs. W. Swan and H. Parkin, captains of the club.

The Secretary announced that the last year's membership had been increased from 80 to 134. Several successful competitions had been held during the year, and competition would be very keen this year, as several valuable prizes had been presented. Mr. C. W. Smith, Darlington, had kindly given a handsome silver cup to be awarded as an aggregate prize, and, among other prizes promised, the Triumph Cycle Co. had kindly presented a gold medal and the Rex Co. a silver cigarette case.

Mr. N. Dewhurst, hon. solicitor to the club, proposed "The Successful Competitors in 1910," which was responded to by several of those present. "Our Visitors" was proposed by Mr. J. Jeckell.

A splendid musical programme was very ably rendered at intervals during the evening, and Mr. S. F. Hill was cordially thanked for the manner in which he successfully conducted the musical entertainment.

The annual ball is fixed for Friday, the 20th inst., at the King's Head Hotel, Darlington.

Durham and District M.C.C.

This club will hold its annual general meeting at the Black Horse Hotel, Chester-le-Street, on Saturday next, at 6.30 p.m. The chief business will be the election of new officers and committee, and the reports read by the secretary, treasurer, and auditors on last year's proceedings.

Liverpool A.C.C.

The above club will hold a general meeting at the Bee Hotel, St. John's Lane, at 8 p.m., on Monday, the 9th inst. Business: To elect a committee, arrange fixtures, and enrol new members. The subscription is now 5s. and entrance fee 1s. Prospective members are cordially invited to attend. Further particulars may be had from Mr. A. J. Jenkins, hon. secretary, 38, Irvine Street, Edge Hill, Liverpool.

Bristol B. and M.C.

A dinner was held at the New Inn, Warmley Hill, Bristol, at which eighteen sat down, eight being members of the B.B. and M.C.

A presentation was made to P. Grout, hon. sec. of the motor section of the above club, on Friday, December 30th, in the shape of a cup given by Messrs. Douglas Bros., for the best performance by a private owner in the A.C.U. Land's End to John-o'-Groat's Trial of July last. The cup, a very fine one (made in Bristol), was presented by Eli Clark, of End-to-end lightweight record fame, on behalf of the donors, and he paid a fitting tribute to the recipient's sporting character in the world of wheels.

Streatham and District M.C.C.

Following is a list of winter fixtures.

JANUARY.

Friday, 6th.—Breakdown competition, headquarters, 8 p.m.
Wednesday, 18th.—Annual dinner, Holborn Restaurant, 6.30 p.m.
Friday, 27th.—Annual general meeting, headquarters, 8 p.m.

FEBRUARY.

Saturday, 4th.—Inter-team trial with Surrey M.C.C. for the Marians Cup.
Friday, 10th.—Flying billiard handicap, headquarters, 8 p.m.
Friday, 17th.—Lecture by Mr. Bennett on "Magnetos," headquarters, 8 p.m.

MARCH.

Friday, 3rd.—Lecture by Mr. J. W. G. Brooker on "Lubrication," headquarters, 8 p.m. (This date is only provisional.)
Opening run (date not yet fixed).

As will be noticed, the date of the Inter-team Trial with the Surrey M.C.C. has been altered to the 4th prox.

Motor Cycling Club, Ltd.

The hon. secretary's report, to be presented at the annual general meeting of the M.C.C., to be held at the Inns of Court Hotel, Lincoln's Inn Fields, W.C., on Wednesday next, the 11th inst., at 6.30 p.m., shows that there are now 342 members on the books. One hundred and twelve members and friends attended the ninth annual dinner. The balance in hand on the year's working amounts to £118 7s. 3d., the total amount of assets over liabilities being £145 17s. 1d. The amount received in entry fees for M.C.C. competitions during 1910 was no less than £237 13s. 8d.

Other business at the meeting is to elect officers and members of executive and to appoint an auditor or auditors.

A smoking concert will follow the business of the meeting (which will be brief). Members and friends are invited; there is no charge for admission.

The N.W. London Club's Gloucester Run.

BY ONE OF THE COMPETITORS.

AT 7.31, on a bitterly cold morning, at Jack Straw's Castle, Hampstead, the first two men were given the word to go, both having sidecars and passengers. I started off alone at 7.36. My twin was misfiring at first owing, I thought, to a cold carburetter. It was still missing at Stanmore, so I thought I would investigate. Everything seemed all right, so I went on until the top of the hill before Rickmansworth. Here an inspiration struck me. I took out the back plug and opened out the points. This did the trick all right, and I shot off again in fine style. The roads were dry and hard, though the cold was intense, and I noticed ice on top of the generator of my lamp. Leaving Amersham we proceeded up the winding slope towards High Wycombe. There is a very steep descent into High Wycombe with a bad turn at the bottom into the main Oxford road; care had to be taken, as the streets were very greasy. Soon after this I overtook Phillips, with his V.S. and sidecar, going well. At the bottom of Dashwood I stopped to warm up a bit and smoked a pipe. Soon Phillips came along, and went up well on the low gear. Then came Rowden with his Bat and sidecar, which took the gradient in fine style. I took it "all out" myself, and was very pleased with the running of my machine, a 1911 Bat, and only ten days old. More misfiring again at the top, and I found the plug points had joined themselves up again.

Oxford Welcomes with Oxo.

This remedied, I proceeded at a fair pace towards Oxford, where R. A. Bishop, a well-known member of the Oxford M.C.C., directed me to the Morris garage. Here hot Oxo was awaiting the competitors, and was, indeed, welcome. Others came in very soon, cold, but very cheery. Williams was reported to have been in trouble with his Chater-Lea J.A.P. and sidecar, and no one had heard what had happened to Pooley and the Premier. Gwynne said he took Dashwood "all out" on his 7 h.p. Indian, and showed me the maximum hand of his speed indicator. It was two-thirds of the way round the dial, and the indicator is calibrated to eighty miles an hour. Simpson turned up as everyone was leaving and reported trouble with his carburetter. By 10.55 everyone had left the garage for the second stage of the journey. Competitors for the special prize had to make a non-stop from Oxford to Gloucester.

Greasy Road—"Concerted" Skid.

Soon after leaving the former town large patches of grease were encountered, and some four miles out three of us had what I might call a "concerted skid." Frankel, who was in front, skidded off his Triumph. I put my brake on and did likewise, and Asling completed the trio. No damage was done except the breaking of Asling's pedal and the crumpling up of my footboard. Here we were passed by Simpson, whose 7 h.p. V.S. was going at a fine pace.

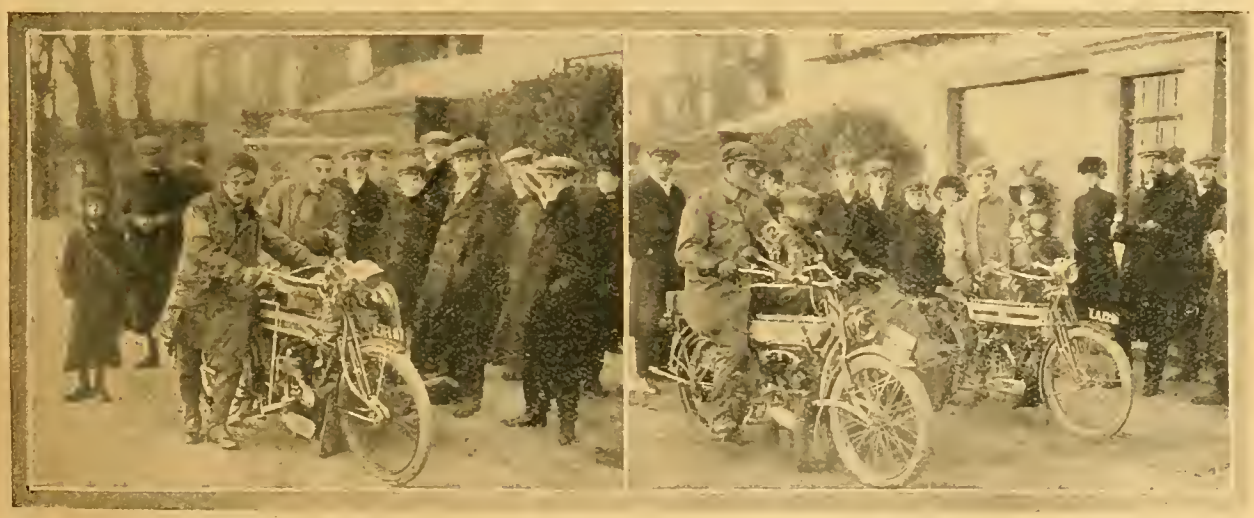
High Wind, but Better Going from Cirencester.

Just before entering Fairford we came upon a meet of foxhounds, and the language of some of the huntsmen was not very polite. However, all went well, although the surface on the descent into Fairford was fearful. From there the road was greasy all the way to Cirencester. This town was well marked with the N.W.L.M.C.C. arrows, so that no one could go wrong. Leaving Cirencester the road was fine and dry, but the wind was terrific, and cut like a knife. I opened the throttle a bit and put my head right down so as to keep as warm as possible. Arriving at the top of Birdlip Hill, I dismounted, and found the surface was in good condition. I took the descent very gingerly, and was soon at the New Inn, Gloucester. Shortly afterwards other competitors came in, most of them almost dead on time. An excellent lunch was provided, which was thoroughly enjoyed by all. At 1.50 Simpson arrived, stating he had had tyre and other troubles all the way down. At lunch Phillips said that he had had to come down to his low gear on top of the hills for a short time owing to the terrific wind. Sidecar passengers also found the high wind very strong and cold.

Observations on Birdlip.

We were soon away again on the road for Birdlip. I got to the top very comfortably, and waited for the others. Gwynne came along first at a tremendous speed. I thought he would not clear the bank at the top, but he just managed to do it. Phillips, on the low gear, made an excellent climb, and Rowden came next with an empty sidecar. He was complaining of a slipping clutch, and was unable to open the engine out at all. I watched several more competitors come up on single-cylinder machines. Rose pedalled hard all the way up the last part. Richter stood on the pedals for the last fifty yards and heaved his machine up by main force. Asling got his Triumph within ten yards of the top; he was unable to pedal owing to the breakage before described. King-Smith rode his F.N. very nearly to the top, dismounted, and ran alongside. The run over the Downs was fine, as the wind was now behind us, and Cirencester was reached well up to time. Here I found the Mors car, which was to have participated in the trial, but had had an accident before arriving at Jack Straw's Castle.

A comfortable run to Oxford was made over very greasy roads, and here I found Williams, who said he had pushed



NORTH-WEST LONDON M.C.C. TWELVE HOURS' RUN TO GLOUCESTER AND BACK.

W. O. Oldman (3½ Zenith-Gradua and sidecar) starting from Hampstead

R. Wellbye-King (7 h.p. V.S. and sidecar) and W. Knight (3½ Triumph) about to leave Jack Straw's Castle, Hampstead.

Make a mental note of the following points:

1. The Michelin "Semelle" Non-skid Cover is a non-skid.
2. The leather tread renders it virtually puncture proof.
3. A considerable reduction has recently been made in the price.

Note the change of Address—

The Michelin Tyre Co., Ltd.,
81, Fulham Road,
Chelsea, S.W.

The N.W. London Club's Gloucester Run.—
his machine and the sidecar the last two miles and a half into the town on the outward journey. He had burnt out his clutch and broken two exhaust valves, which he could not replace. Soon Gwynne came in, and was off again very shortly. I started off with my lamp burning brightly, although I knew the generator was half empty. At High Wycombe I changed over on to the reserve generator, and set out up the long hill on to the Amersham Road.

It was a very dark night, but luckily I had been over the road several times before, and did not miss the way. From Amersham I started on the last lap, and found the road to Rickmansworth very twisty. I came off round one corner and completed the destruction of my footboard, but did not hurt myself. All went well for the rest of the journey, and I rode steadily from Stanmore, arriving at Hampstead about 7.20. Here I found Pooley, who said he had run out of petrol, and although he had signalled to the drivers of several cars none of them would stop for him. Berlandina was also there. He had had tyre troubles and withdrew at Oxford. Very soon Phillips came in a few minutes late, also King-Smith.

Then followed Rose, and, after ten minutes, Frankel, Richter, and Asling. No one had heard anything of Rowden or Gwynne, but people were complaining about missing the route, so that this may have been the cause of their tardy appearance. I waited until 8.45, but saw no one else except Owen and Westacott, and then went home, after a most enjoyable day. My twin gave me no trouble except for the misfiring in the first fifteen miles, and I shortened the belt once by taking out a Stanley hook.

TABULATED RESULTS—OFFICIAL.

Mins. early or late at controls.

Name of Rider, H.P., and Machine.	Oxford.	Gloucester	Oxford.	Hampstead.	Award.
†A. S. Phillips (7 V.S. & s.c.) ..	0	4	4	8	Cup and special prize.
†Hal Hill (8 Bat)	*36	*12	*29	16	Cup
E. D. Rose (3½ Triumph)	0	13	1	13	Cup
†S. King Smith (5-6 F.N.)	*10	*1	*3	19	Cup
†G. Rowden (8 Bat & s.c.)	0	2	30	—	
†G. B. Owen (3½ Swift Ariel) ..	2	1	*2	25	Silver m. & special prize
H. Frankel (3½ Triumph)	*15	*1	*4	30	Silver medal
O. Richter (3½ Triumph)	*16	*1	*4	30	Silver medal
G. E. Purchase (3½ Bradbury)	4	16	0	—	
E. Gwynne (7 Indian)	*18	*4	*16	—	
C. Simpson (7 V.S.)	14	37	—	—	
S. H. Asling (3½ Triumph)	0	1	*1	32	Bronz medal
†E. Westacott (3½ Triumph) ..	*10	*1	*3	46	Bronz meda
W. C. Knight (3½ Triumph) ..	19	74	31	—	

The following retired: C. Williams (8 Chater-J.A.P. s.c.), H. J. Pooley (3½ Premier), H. Berlandina (7 V.S. and s.c.), R. Welby King (7 V.S. and s.c.), W. O. Oldman (Zenith and s.c.), and A. W. Loughlin (5 Sarolea and s.c.).

Times marked * indicate that competitor arrived so many minutes *before* his schedule time. Other figures indicate minutes late.

† Non-stop. The special prizes are given for nearest to schedule, and including a non-stop Oxford to Gloucester.

Harrogate Club's Winter Trial in Yorkshire.

AN interesting winter reliability trial took place on Tuesday, December 27th. The course was 150 miles in length, and ran from Harrogate to Saltburn, thence by the coast road to Whitby, from there over to Pickering by the well-known and stiff ascent "Blue Bank," and on to Malton, York, and home.

At the start the weather was fair and roads splendid, but from Thirsk to Saltburn they were covered with frozen snow, making sideslips very common. From Saltburn to Whitby the roads were in a deplorable condition, exceedingly hilly and all mud. After the hour allowed for lunch at Whitby, tracks were made over the moors to Pickering; at Blue Bank Hill one or two riders (who got as far) were seen to be in difficulties, and afterwards the famous "Hell Corner" found some more of the riders laboriously pushing up their machines. From here to near Pickering the road was fairly respectable except for the deep snowdrifts into which the competitors kept continually running, and then later the frozen roads made riding at any speed an undertaking of some danger. From Malton to York more snow at least six inches deep. Belts refused to grip, boots were worn through as they were being continually used as make believe jockey pulleys, and the riders dared not stop owing to inability to start the machines again on the treacherous roads. After leaving York roads in good order were again encountered, and the last section of the ride enjoyed.

Of twelve entrants ten faced the starter, and only two arrived home in the time limit, having completed one, if not the most arduous ride ever held by a Northern club.

The list of riders and their machines is appended:

1. T. C. Atkinson (3½ h.p. T.T. Triumph), lost no marks, only trouble belt slip.

2. H. W. Fortune (3½ h.p. Triumph), lost six marks, belt slip and failure on hill.

J. A. Tindall (3½ h.p. Triumph), bad skid and belt trouble.

W. B. Atkinson (3½ h.p. Triumph), belt trouble, skid.

E. Barret (3½ h.p. T.T. Triumph), belt trouble, and lost way in snowstorm.

F. Mackay (5 h.p. Rex and sidecar), five hours late, lost way and burst a tyre.

W. E. Grange (7-9 h.p. Rex and sidecar), arrived home next day, lost way in snowstorm, ran out of petrol.

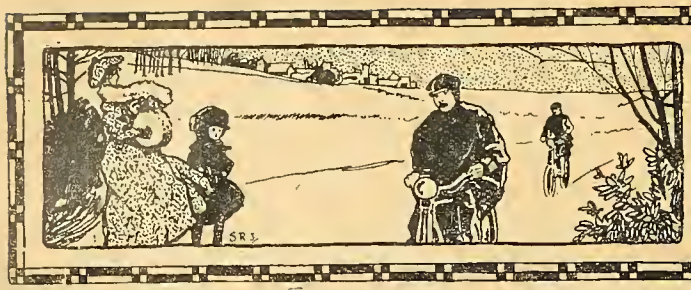
Jim Mackay (3½ h.p. Rex), belt trouble and broken pulley.

J. E. Brooke (3½ h.p. Triumph), front wheel came loose after forty miles, so retired.

G. S. Sayner (3½ h.p. Brown), retired, tyre troubles.

Group of competitors and officials. Only two riders completed the course within the time limit

The only passenger motor cycles entered. Both got lost in a snow storm and finished very late.



Sheffield and Hallamshire Winter Reliability Trial.

FOR this run, which took place on Tuesday, the 27th ult., seventeen starters turned out, and of these nine succeeded in finishing. The route was from Sheffield to Bridlington and back, a distance of 170 miles.

On the outward journey the competitors had to drive through two blizzards, and from Market Weighton onwards through snow to the depth of four or five inches. It is not to be wondered at that under these exceptionally trying conditions there were several retirements, and the greatest praise is due to those hardy riders who succeeded in battling their way as far as Bridlington.

Only one rider succeeded in doing this without loss of marks, viz., J. A. Stacey, on a single-geared Triumph and sidecar. He had as passenger his wife, and his was certainly the most striking and plucky performance of the day. Unfortunately he afterwards lost marks through the breaking of a throttle wire.

Messrs. A. Tower, J. Beeston, and C. Dickinson, all riding twin Rex machines with sidecars, withdrew on account of punctures and magneto troubles.

At Bridlington the morning dawned bright and frosty, but between 8 and 11.30 showers of sleet and rain, with a strong cold wind made things as wretched as they could possibly be, and the little knot of spectators who had assembled at the Brunswick Hotel to welcome and check the Sheffield riders had almost given up hope of seeing any of them, when just before noon a faint "pop pop" was heard round the street corner, and Messrs. Haslam and Bellamy reached the car which held a large control sign, kindly placed there by Mr. J. W. F. Tranmer, who had charge of the checking arrangements. He was assisted by Messrs. T. S. Webster and J. H. Crickmore, and Mr. Renard, of the Brunswick Hotel, who rendered invaluable assistance in feeding the icy cold riders, and going out two miles with Mr. Tranmer to relieve a stranded competitor who had run out of petrol within sight of Bridlington Bay.

The two first arrivals were soon followed by Messrs. A. T. Smith (3½ h.p. Zenith-Gradua); F. Dover (3½ h.p. Triumph); Cross (3½ h.p. Triumph); Vale (2¾ h.p. Griffon), broken pedal; Roper (5 h.p. Rex), front mudguard broken through sideslip, and who went back to Sheffield by train; Evers (3½ h.p. Precision); W. Swift (2¾ h.p. Douglas); Blackburn (3½ h.p. Zenith-Gradua); J. Ardern (3½ h.p. Bradbury); and two sidecars, Messrs. Durant and Turner (passenger), (3½ h.p. J.A.P.); and Mr. and Mrs. Stacey (3½ h.p. Triumph, single geared). The last named had lost no time at any of the controls on the outward journey, and the lady's plucky ride was greatly admired by the crowd which had gathered round the Brunswick Hotel. Many of the riders were covered from head to foot with a mixture of snow and water, and in some cases were wet through although protected with overalls.

The performances of the Zenith-Gradua machines, which are new to the East Riding of Yorks., were greatly admired, and it was the general opinion that a few trials of this description would do more to bring before the public the good points of the motor cycle than any summer trials.

W. Evers lost his way and finished late, and R. Blackburn ran into a ditch, but finished. R. Dover suffered a bad sideslip, which delayed him considerably.

The run generally evoked a good deal of sporting comment on the part of the public along the route, and was considered a great success by all those who participated in it. One thing that was highly appreciated by all the riders was the generous liberality of the proprietors of Oxo, who served out a supply of their stimulating beverage at Selby.

The final result was:

PRIZES.

1. J. Haslam, 3½ h.p. Zenith-Gradua.
2. C. Bellamy, 3½ h.p. Zenith-Gradua.
3. J. Smith, 3½ h.p. Zenith-Gradua.
4. T. Durant, 3½ h.p. J.A.P. and sidecar.
*5. J. Ardern, 3½ h.p. Bradbury.

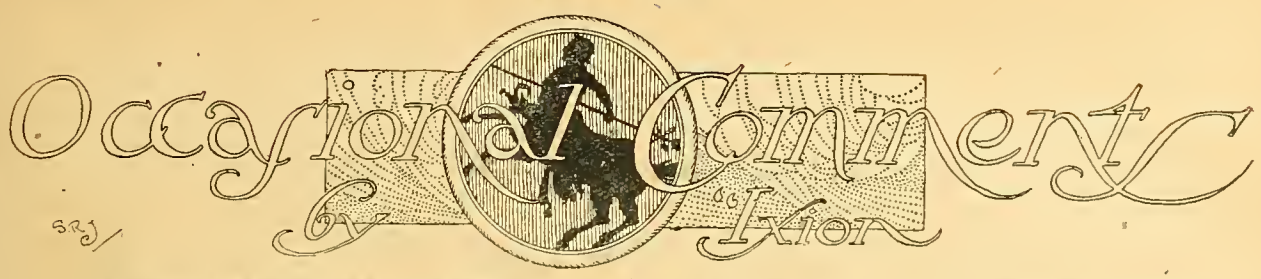
SILVER MEDALLISTS.

6. J. Stacey, 3½ h.p. Triumph and sidecar.
7. W. Swift, 2¾ h.p. Douglas.
8. R. Blackburn, 3½ h.p. Zenith-Gradua.
9. F. Dover, 3½ h.p. Triumph.

*Would have been bracketed first but for an arithmetical error in calculating time by which he lost ten minutes and ten marks.

AT THE BRIDLINGTON CONTROL.

C. Bellamy and J. Haslam (3½ Zenith Graduas), the first competitors to arrive, being checked by J. W. F. Tranmer (Scarborough M.C.C.) W.-Vale (2¾ h.p. Griffon); F. Dover (3½ h.p. Triumph); W. Roper (5 h.p. Rex); T. W. Durant and Turner (3½ J.A.P. and sidecar).



Magnetos Behind the Cylinder.

The statements current to the effect that placing the magneto abaft the cylinder affects the steering adversely are sheer twaddle. Correct steering is the sum total of many factors, and the effect that the abaft magneto position may have can only be tested by trying both positions on the same machine. It is, of course, true that some machines with magnetos astern steer better than others with the magneto forward, and *vice versâ*, but it is absurd to conclude that the magneto position is the sole or even the dominant factor.

Magneto position may produce tremendous modifications in the steering, although the device weighs but a few pounds, just as an ounce weight may lower one side of a large weighing scale totalling many pounds; for the position of the magneto may just alter the distribution of the weight between the rear and front wheels.

If an actual case of this sort exists, and the effect on the steering is bad, a slight alteration of the frame tube lengths will correct matters. In no case can the new position affect the steering enough for the results to be perceptible in touring work, whereas for track purposes it does not matter in the least where the magneto is placed. The sole conceivable disadvantage of the new position from a touring standpoint is the raising of the centre of gravity, and this again is a ridiculous contention. A high postion of the magneto no more induces side-slips than a full petrol tank does; and those who prattle of such dangers would keep the petrol low in their tanks over greasy roads, if they were logical.

Taxation Concessions.

There is no likelihood of any further concessions in respect of taxation being granted to any special professions, and hence there is small profit or sense in continuing the discussion; but several clergy ask me to state that they have no desire for favours in this direction. The few motor cycling clergy are mostly curates, and no curate can afford to ride a motor bicycle unless he has private means. Those who have private incomes desire no concessions.

While nobody grudges the medicos their rebate, it is curious this particular profession should have received the favour, for the budding medico is better paid than most men are at the outset of a profession.

A young doctor of my acquaintance, who only possesses the cheapest diploma available, has just accepted his first post at a salary of £130 a year, and all found. We must suppose the principle of the rebate is that the doctor has little time for pleasure riding, and that the Treasury do not desire to tax vehicles employed almost solely for professional purposes. If a music hall artist desires a rebate, he has merely to restrain his trips to business journeys, and to paint on his tank "The Green-eyed Hottentot, c/o Messrs. Jones, Strand, W.C.," in letters an inch high, whereupon his licence fee is remitted. [The Act says that the machine must be constructed solely for the purpose of carrying goods.—ED.]

Private Riders and the A.C.U.

Several correspondents are slow to realise the peculiar position of the A.C.U., witness the Rev. R. Measures's complaint that the A.C.U. does not organise sufficient competitions for private owners.

To begin with, every competition is expensive to organise. Hence a few entries at a large fee or numerous entries at a small fee are essential to solvency. The A.C.U. cuts its coat according to its cloth, according to the habit of all sensible men; and finding numerous entries are not obtainable, charges comparatively high fees to the few entrants whom it can command.

Secondly, we are always butting our heads against the old difficulty of testing the *bonâ fides* of the private rider, a question that never has been perfectly solved in any branch of sport, and never will be until the millennium.

Thirdly, small local clubs are in the best position both to attract private owner entries, and to verify the *bonâ fides* of their entrants.

Fourthly, many of the social clubs resent the presence of private owner events in the A.C.U. programme, and prefer that the governing body should confine itself to the general welfare of the pastime. It is for these excellent reasons that the A.C.U. does not invade every provincial centre, and run private owners' competitions all over the country at a dead loss.

THE LONDON-EXETER WINTER RUN.

The team of Moto-Reve riders who completed the run within schedule time—C. Patteson, G. Griffiths, and G. England. The twin engines are the new 334 c.c. 50 × 85 mm.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Undergeared Pulleys.

[5243.]—I notice that some makers who are fitting geared engine pulleys at the same time reduce the size of their belt rims. This in my opinion is a mistake. The larger the belt rim, the larger the engine pulley, or the higher the speed ratio between engine shaft and pulley. Both of which appear to me to be distinct advantages. I am not aware of any objection to the belt rim of usual size, therefore why the apparent defect in design? R.H.B.

M.C.C. Winter Run.

[5244.]—Can you inform us if it is a fact that certain competitors in the M.C.C. London to Exeter trial, riding machines fitted with sidecars, left their passengers behind at Salisbury and proceeded alone to Exeter, taking up their passengers on the return journey, and obtaining full marks? We are particularly interested in this question, the three riders of Chater Lea No. 7 machines having carried their passengers through the entire journey, and we cannot understand how certain other riders passed the checkers without their passengers. CHATER LEA LTD.

[We cannot definitely answer the question raised, hence publish the letter.—ED.]

Motor Cyclists look to your Policies.

[5245.]—The writer of letter 5204 appears to have been somewhat unfortunate in his choice of an insurance company, as my experience in this respect has been much pleasanter.

In March last I took out a personal accident policy with the Railway Passengers' Insurance Co. at ordinary rate, and within three months found it necessary to make a claim of about £15 as the result of a motor cycle accident. This was settled with such promptitude and fairness, that I feel sure "FN 761" would be well advised to transfer his patronage to this company.

Of course, I need hardly say that my policy excludes injury resulting from racing. R. ERNEST TURNBULL.

[5246.]—With reference to the letter in your issue of December 22nd. above the initials "FN 761." in connection with motor cyclists' accident insurance policies, you will be interested to know that the Ocean Accident and Guarantee Corporation, Ltd., issue policies without any exclusions as regards motor cycling, and without charging an additional premium for this particular risk. The moral is, of course, to insure with a corporation whose policies are free of such restrictions. JAS. A. WELLS,

Secretary at Reading, Ocean Accident and Guarantee Corporation.

Reply to the Challenge to Dutch Motor Cyclists.

[5247.]—I like the idea suggested by W. Cooper and W. Pratt in the issue of December 22nd, but would like to point out that I alone cannot promise a 1911 Reliability Trial for English and Dutch motor cyclists. I think that a visit of only one day is rather short, and should prefer a two or three days' tour, enabling us to show our visitors the prettiest spots in Holland, and at all events our celebrated Isle of Marken.

We all know here that the English motor cycles are very reliable, and I believe that Dutch motor cyclists will prefer the idea I suggest in this letter.

This week the Dutch M.C.C. is holding a council meeting, and I shall be only too pleased to bring forward the proposed visit and to communicate the decision as soon as possible.

I wish you all a happy New Year

A. CITROEN, KZN.

Amsterdam. Hon. Sec. Dutch M.C.C.

The Suggested Route for M.C.C. London-Edinburgh Run.

[5248.]—I have read with interest the correspondence appearing in *The Motor Cycle* regarding the suggested routes for the M.C.C. London to Edinburgh run. As a northern motor cyclist knowing the run from Bowes to Brough (having been over the course half a dozen times recently), I should like to ask your correspondent "5128" if he can vouch for the condition of the roads when the trial takes place, June 3rd, 1911. I presume he intends competitors to get into the "street" *viâ* Boroughbridge. If this is the case, what a poor chance a competitor stands of getting any replacements or attention between Boroughbridge and Penrith, whereas should the old course be retained there are York, Thirsk, Easingwold, Northallerton, Darlington, Newcastle-on-Tyne—all good towns for attention and replacements. Also there is a main line train service at any of the afore-mentioned towns, which is an important factor should a competitor be taken ill or breakdown. As to police traps, I have certainly been in those between Penrith and Edinburgh, but not in Durham or Northumberland—the police in these districts have evidently something else to attend to. C. W. SMITH.

An Engineer's Suggestions for the T.T. Race.

[5249.]—I would like to offer the following suggestions as an improvement on the present regulations for the Tourist Trophy Race.

1. Have an open class, allowing any size or kind of engine, but fix a petrol consumption limit. Marks to be awarded according to amount of petrol remaining unconsumed at the finish as well as speed.
2. Weigh the tyres (outer covers) before and after the race, and allow marks according to the wear as shown by the difference in weights.
3. In the lightweight class fix the maximum weight of the machine at, say, 110 lbs., and award marks as in the open class. If a tie the prize to go to the lighter machine.

In this way if forty completed the course the maximum marks would be 40 for speed, 40 for minimum petrol consumption, 40 for minimum wear on tyres, giving a total of 120 marks. Thus the first prize would go to the best combination (rider and machine), and it would also put single and multi-cylinders, four and two-cycle engines, chain and belt drivers, all on the same basis. I certainly think it is time the tyres themselves were taken into account, and marks awarded under this heading would also show the advantages (if any) of multi-cylinder and belt drive over singles and chain drive.

It would also encourage spring frames. Of course these suggestions could be improved and enlarged upon, but it would be interesting to hear what other readers of *The Motor Cycle* have to say. D.E.J.

Transmission for the Colonies.

[5250.]—I notice that "Ixion" in his Occasional Comments of December 1st requests the assistance of "some colonial authority" on the question of the most suitable form of transmission for the colonies.

Having only been in Canada for the short period of a little less than a year, I regret that my ideas cannot be classed as those of an authority; but, as a keen observer of things from a motor cycling point of view, and as one who has ridden for many years on English roads and for a short while on those of Canada, I trust my opinions will not be absolutely valueless.

The point which struck me most forcibly in "Ixion's" comments was that he, in common with many others in the old country, seems to infer that "the colonies" are a place or country in some particular and definite location. That such

is not the case he is of course aware, and on reflection will appreciate that the "wildly contradictory instructions" he complains of are not as unreasonable as they may at first appear.

For instance, while rubber belts may, and do, form an excellent medium for transmission in this section of the Dominion, it does not necessarily follow that they can be safely recommended for, say, the tropical heat in parts of India. Neither should one deduce that, because a chain gives excellent service in a rainy territory like British Columbia, the same happy result will be obtained in some dry and parched district of Australia.

Now it appears to me that for anybody to say that this or that form of drive is the one most suited "for the colonies" is simply a confession of either ignorance or lack of due and sufficient consideration.

When one recalls the fact that these aforesaid colonies extend almost from pole to pole, embrace roads of every composition and condition, and experience every conceivable variation of climate and temperature, and yet, in England, where riding conditions are practically identical all over the country, the fiercest of controversies has been maintained on this very subject of transmission, and even now is still a debatable point, as is proved by the variety of drives employed by the different manufacturers: I say, taking all these facts, one can only come to the conclusion that the best advice a colonial in any part of the empire can receive is that obtained from a brother motor cyclist in the locality; this coupled with his own commonsense should be the guide in making a decision on this or any other point in connection with the machine best suited to his requirements.

Let it not be hastily supposed from these remarks that the efforts of "Ixion," and other kindly spirits, to persuade British manufacturers to give the colonial market the attention it deserves, are not appreciated; far from this being the case, it is devoutly to be wished that they will continue to drive home those points which are absolutely essential to a machine intended for colonial work, *i.e.*, scientific springing fore and aft, high clearance, and good margin of strength throughout, etc.

BEN H. BRAMBLE.

Toronto, Canada.

Gear Variation by Slipping a Clutch.

[5251.]—I am somewhat surprised at "Ixion's" statement, under the above heading, which appeared in your issue of December 22nd, that, "No motor cycle possesses so flexible a clutch as the Hele-Shaw, and at present it is impossible to fit a motor cycle with an infinitely variable gear by any form of slipping device."

It is evident that "Ixion" did not examine the free engine clutch, which was not only shown in detail, but fitted on all Indian machines at the Olympia Show.

This clutch is of the multiple disc type, somewhat after the Hele-Shaw principle, with the exception that four discs of Raybestos are interposed with five steel plates, all of which are held in adjustable contact by compressed coil springs. This construction does not need lubrication, avoids all sticking, and will not burn out however much it is slipped, so that it practically acts as a change speed gear, or, to quote the makers, "a gear with a thousand speeds, for so wide is its scope of action and so sensitive is it in operation that an infinite range of speeds, may be obtained from the highest to the lowest balancing speed, and the clutch holds to any position in which it may be set without the aid of any stop or lock."

My own experience, after having ridden a 7 h.p. Indian with the free engine clutch and sidecar attached, is that the Hendee Co.'s claims are entirely correct.

I have driven through the thickest London traffic with the clutch slipping for over twenty minutes at a time. I also find that I can let out the clutch on the steepest hills, allow the combination to come to a dead stop, and then by gently engaging the clutch with the most convenient hand lever, the machine will pick up as smoothly as one can possibly imagine until the drive is absolutely direct, and, mind you, this with a 4 to 1 gear.

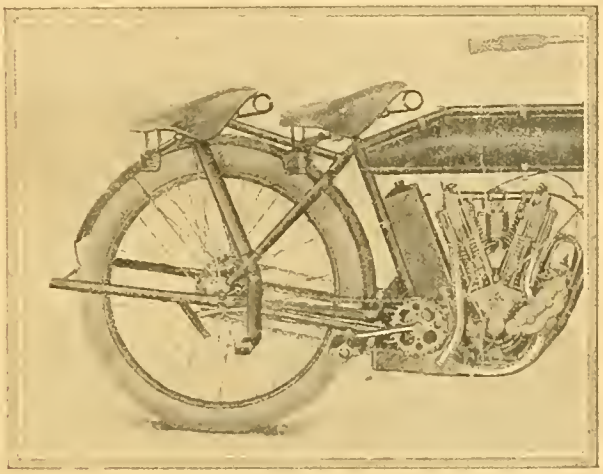
It appears to me that for ordinary use with a sidecar the Indian clutch is all that one can desire, and it is my firm opinion that one firm at least have effectually solved the problem of infinite gear variation by a slipping clutch.

ERNEST FRASETTI.

Tandem Seat Attachments.

[5252.]—I have noticed in your columns of late a discussion about passenger motor cycles. I have never seen any allusion made to tandem attachments by adding an extra seat on the two wheels only, and I am sending herewith a sketch showing how I rigged up one for my machine, which, by the way, is a 5 h.p. Indian. It has plenty of extra power for carrying a passenger, and I might add that it has never jibbed on a hill yet. It is not fitted with any two-speed gear.

These tandem attachments are quite common in the States, and to see the fellows starting out on Sunday mornings with a lady on behind is not an unusual sight. The riding is very comfortable on one of these attachments, as the position is about the same as on the other seat. The steering is not any more difficult; in fact, one does not notice the difference at all, except possibly in turning a sharp corner or riding in



Rear seat tandem attachment referred to in this letter.

deep sand. Therefore, it does not tire one to drive with a passenger aboard, and without a passenger it is the same as an ordinary motor cycle.

The sketch gives a general idea of attaching this extra seat. You will note it is so arranged as not to interfere with the rear wheel adjustment or the stand.

Atlanta, U.S.A. G. B. SISSON.

[There have been numerous references to rear tandem attachments in the past, and although similar attachments have been placed on the market, this method of carrying a passenger has not found favour in England.—ED.]

The Motor Cycle Business in France.

[5253.]—Mr. R. G. Nye in his letter No. 5205 gives his impressions on the state of the motor cycle business in France. Though he has a pretty fair view of the matter I think he is not quite right.

Will you allow an old and still enthusiastic rider of over ten years standing, over fifty years old, to say a word on the question?

When I started motor cycle riding it was on the old-fashioned De Dion tricycle. Next, I got a little Zedel motor bicycle, surface carburetter and twisted round belt. The motor was not bad at all, but the round belt gave endless troubles. Later on I got another machine with m.o.i.v. engine; with it, overheating was the rule, so I exchanged it for a twin 2¾ h.p., which went pretty well, but was not a good hill-climber. We—I and a friend—have toured on two similar machines through the South of France and the Alps, some 1,500 miles each time, but we had all sorts of troubles, such as oily contact breakers, slipping belts, choked carburetters, pushing machines up hills half climbed, etc. A similar tale could be told by many motor bicyclists of yore, and it was enough to deter the would-be rider from the pastime, and explains the discredit of the motor bicycle in France and the scarcity of riders. Commercial

travellers and doctors tried to use the machines, but soon gave it up on account of their lack of reliability.

Frenchmen do not ride much during the winter, and seldom at night. The reason is because French manufacturers do not make their machines for use in bad weather. Usually they are unprovided with non-skid tyres, and special winter garments are not easily procurable; also special motor bicycle lamps are not currently made.

There are few manufacturers in France, and as a rule their productions are not made in a sufficiently practical way; the fittings are not easily accessible, and the machines are not made to be dismantled easily on the road as many foreign ones are, so that the smallest breakdown takes too much time to overcome. Back-wheel puncture repairing on the road is not easily done unless one is provided with spare butt-ended tubes, or a stand, which few makers provide. Moreover, on French machines the saddle is too high from the ground.

The men of moderate means, spoken of by Mr. R. G. Nye, are not scarce; on the contrary they are legion, and for the present they prefer cars, small or second-hand; but if our makers would offer them a good reliable, flexible, comfortable, and clean machine of moderate weight, neither a toy nor a monster, at a reasonable price, it would have a great sale, and the little mount might return to favour.

We have some foreign makes on sale, such as the Moto-Rêve, with twisted round belt; Motosacoche, lightly built; the Wanderer, N.S.U., and F.N. (which is in good favour). English makes are almost unknown or too dear. A machine such as the Douglas, or others like it, would, I think, find a ready sale here. I must say, however, that the would-be purchaser fears difficulties in getting spare parts when wanted; also the high custom duties and other expenses amounting to about £8 for a heavy machine do not facilitate business, but they may be partly discarded.

I and a few friends have decided to try English-made motor bicycles this year; they are likely to attract notice among fellow-members of our clubs.

Tours, France. GEO. G. BELLNOT.

[5254.]—I should like to add a few remarks concerning Mr. Nye's letter on the motor cycle business in France. The French police regulations do not enforce the carrying of number-plates as in England. All that is necessary is the purchase of a small metal band on which should be engraved the owner's name and address. This is clipped to any part of the tubing, and can be procured at most of the tobacconists' shops on payment of twelve francs.

I have also often remarked with surprise the scarcity of motor cycles in the French capital. The Paris streets for the past two or three years have certainly been in a very bad state, and the traffic badly managed, so that it makes riding a very unpleasant matter. But I should say that the main fault lies with the makers. On your side I notice the manufacturers make a speciality of putting machines on the market fit for "la grande route," and for town traffic. On this side there are few, if any, who construct a machine with free engine and clutch.

The motor cycle acquired a rather bad reputation in France some years ago, and the saying "Give a dog a bad name" can be suitably applied here. This bad impression still prevails with persons not "in the know," and the only salvation for the trade as expressed by many of my friends connected with the various motor cycle clubs in this country, is a periodical on the lines of your excellent journal, *The Motor Cycle*. We still live in hopes, however.

There is no doubt of the existence of the man of moderate means in this country, for is not France the country *par excellence* of the *petit rentier?* What he wants is a machine that will go, and not always leave him *en panne*, or in the lurch on the road. It is only his ignorance of the worthiness of the present-day motor cycle which is keeping him back, and, as already stated, the motor cycle would be encouraged and fostered by the medium of a well-organised motor cycle journal.

Lyons, France. R. J. SCHILLING.

Cost of Running a Motor Cycle.

[5255.]—On reading in your paper the cost of running a motor cycle, I thought my experience would be interesting to some of your readers. It is kept for two years, by paying my bills half-yearly and buying everything from the same man, and at the end of the second year I sold the motor cycle (for a new one), so I know exactly how much to deduct for depreciation in value.

Cost of machine	£48	0	0
Price of machine when sold	23	10	0
Loss on same	£24	10	0
426 gallons of petrol	26	7	6
Oil	3	2	6
Tubes, belts, tyres, solution, patches, repairs to machine, etc.	31	9	0
Sundries, such as mud shields, clothing, tools, etc.	8	13	6
Licences	2	0	0
Total	£96	2	6

If petrol is allowed at eighty miles to the gallon, it works out at .64d. per mile, or 34,080 miles in two years, and this through all sorts of weather, summer and winter, and along country and by-roads mostly, which explains the heavy expenditure on tyres and new parts.

Why cannot the Triumph Cycle Co. make an all-weather machine, all black and stronger all through, and style it "The Colonial"?

One reads a lot about skidding in winter. This is the third winter for me to ride *every* day and I have not had a skid yet, but I do get a lot of trouble with everything that is rubber on my motor cycle, viz., punctures in the tyres and belt troubles. CC 194

Needed Improvements.

[5256.]—In answer to "Cantilever's" letter (No. 5202), December 15th, "Friend Sykes" is the owner in both cases. The A.S.L. is still in my possession, and is not for sale. The Indian is for sale. The A.S.L. was advertised for sale through an error of my clerk, and though applications have been made for its sale, I will not part with it. The 200 miles to which he has referred was a careless estimate of the same clerk, and the 1,000 miles is an under-estimate of mine. I suppose I must have covered upwards of 1,500 miles if everything was carefully reckoned.

With regard to "Cantilever's" advice that I should specify Druid spring forks and a Rex cantilever saddle-pillar, I have little to say. If he cares to accept my advice, he will perhaps hold his tongue until he knows what he is talking about. The finest steel springs invented cannot be compared to air springs. They are like comparing the boneshaker of old with the modern pneumatic bicycle. Before he again tries his hand at letter writing let him spend a few weeks in careful tests of cantilever seats and steel spring forks and the same time in riding an air sprung machine.

In conclusion, dear "Cantilever," I trust my reply has proved interesting. FRIEND SYKES.

SUMMARY OF CORRESPONDENCE.

"Disgusted" writes complaining that the proprietor of a West End garage refused to supply less than two gallons of petrol on Thursday last. He had brought his machine by rail from Brighton with empty tanks, and was prepared to buy a gallon, but finally had to pay for two, although he only used one. His obvious course is to report the circumstances to the R.A.C. and A.C.U., the official appointment to which this garage holds.

EXPERIENCES WANTED.

REPLIES TO THE QUERIES BELOW SHOULD BE ADDRESSED c/o THE EDITOR, AND WILL BE FORWARDED DIRECT TO THE QUERIST.

"C.C. 194." A good make of waterproof coat. The P. and M. after 25,000 miles use, particularly regarding the behaviour of chains in all weathers.

"M.D." (Huntley). 3½ h.p. Zenith-Gradua and sidecar. Is the combination suitable and capable of taking average hills on main roads? Is tyre wear excessive? Total weight of driver and passenger 22 stones.

"B. and W." (Warwicks.). The F.R.S. back rest. Private readers' opinions wanted.

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Amount of Oil in Crank Case.

I recently drained the oil from the crank case of my 1909 3½ h.p. Rex Tourist. I should be obliged to you if you could tell me what amount of oil in pumpfuls should be injected to replace same?—B.J.R.

Three pumpfuls would be a suitable amount, but err, if anything, on the side of over-lubrication. A new piston costs a good deal more than a gallon of oil.

Passenger Attachments.

Can you tell me if there is on the market any reliable coupling for motor bicycle and a lady's ordinary machine? If there is more than one pattern, could you give the points in favour or against each? How would this coupling compare with a sidecar in safety? Also, how would it compare with sidecar generally?—Rev. S.G.

There are at present on the market two patterns, the Unito and the Ariel couplings. Although, of course, more expensive, we should say that a sidecar would be infinitely safer and more comfortable for the passenger, and would be less difficult to attach or detach when it is desired to use the bicycle as a solo mount.

Loss of Power on Hills.

I have a 2¼ h.p. Peugeot, about 1905 pattern. I have replaced Longuemare carburetter with Amac. Originally had plain coil but now has trembler. The machine starts well, and is fast on the level but loses power on hills and needs assistance. The cam raises the exhaust valve ⅛in. only, and I think the engine overheats somewhat. Can you help me?—Peugeot.

Have you examined the exhaust valve cam? If you have, and you found that it is worn you had better get a new one from the makers of the engine. ⅛in. is not sufficient lift, and a freer exit for the exhaust gases would, of course, allow the engine to keep cooler in running. A restricted valve opening is the most common cause of overheating and loss of power. Also see that the exhaust valve spring is sufficiently strong. You omit to mention the gear and your weight. The ratio of gearing is, of course, most important in hill-climbing.

Fitting a Sidecar Attachment.

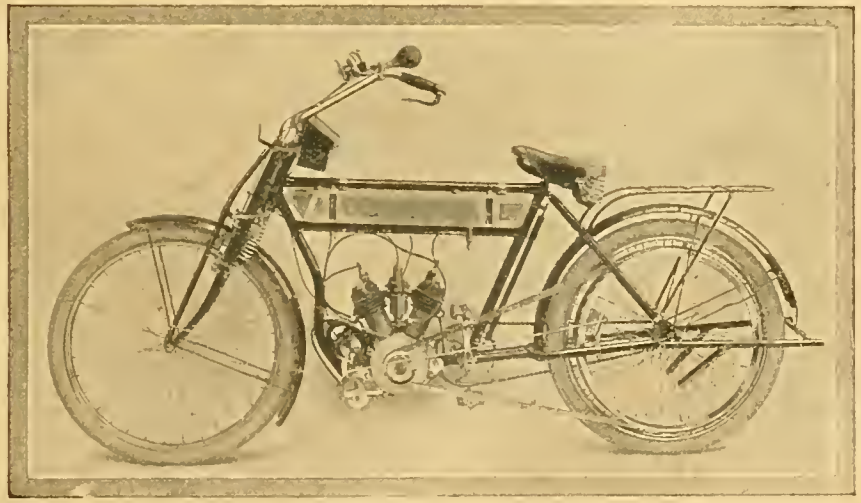
I wish to fit a sidecar to my 1909 two-speed Humber. The best and easiest place to fix the rear clip is about six inches from the centre of the rear spindle, as it would then be clear of the gear, but I am told this would affect the steering and wear the tyres very quickly. Is this correct? The clip might be taken further back, but this would entail making a special thin clip and altering of the high gear control rod and the centre of the sidecar axle would still be three inches from the centre of the rear spindle. Would this do away with the difficulties mentioned, if not what do you advise?—W.D.

We do not think that fixing the rear clip six inches from the centre of the spindle would cause undue wear of the tyres, but one of the most prominent sidecar makers informed us some time ago that he found if the axle of the sidecar wheel was exactly opposite the rear wheel spindle of the bicycle it improved the steering of the combination. If you refer to the drawing of the 1911 Montgomery sidecar, page 1063, November 3rd, you will see how your difficulty has been overcome by at least one manufacturer.

A Question of Gear Ratio.

I have lately bought an Ariel-De Dion converted tricycle to quad car (two-seater) in excellent condition, weight all on 4 cwts. exactly. Engine De Dion 80 × 80 mm., say 3 h.p., with two-speed gear, high 7 to 1, low 9 to 1, water-cooled head, chain driven, with differential gear. Do you consider same capable of taking self and passenger along ordinary give and take roads? Total weight as under: Machine 4 cwts., self 2 cwts., passenger 1½ cwt., total 7½ cwts. For myself I have my doubts, but I know the machine has been running with passenger.—One in Doubt.

The machine should take you almost anywhere, at a slow speed of course, provided it is properly tuned up and in good running order. It is all a question of gear ratio, and you may have to drop slightly lower than 7 to 1 for the top gear. However, should you find the pace with two up intolerable, you have the option of dispensing with the passenger's seat. The type of engine you possess was most efficient, and would run for long stretches without overheating with a very low gear, partly owing to the low compression.



NEW MODEL FORWARD LIGHTWEIGHT.

The 2¾ h.p. twin-cylinder engine has m.o.i.v. and the bore and stroke are 56×70 mm. The control, including the magneto advance, is by levers on the handle-bar. The makers, The Forward Cycle Co., claim for it extreme silence and maximum stability.

Poor Compression. Moisture on the Carburetter.

[?] I have a 3½ h.p. Quadrant, a.o.i.v., 1906. I have just had new piston and rings fitted, and it has done about five hundred miles. But the compression seems to vary. Sometimes I can stand on the pedal for a minute or more, and perhaps the next time I test it only for two or three seconds. The rings are plain ones, *i.e.*, just sawn through at the joint. Valves have just been ground, and all joints are tight. I do not test it when the piston is gummed up with oil, but just after running a second or two on the stand. Also can you tell me if this is right? When the machine is running the carburetter (B. and B., 1909) is wet with petrol all over the top where the controlling wires enter and down the sides as well. I do about seventy or eighty miles to the gallon. How many miles per gallon ought I to be able to do? There must be considerable waste of petrol if the carburetter is wet on top like this.—F.G.R.

Without actually examining the machine it is difficult to account for the loss of compression, but we should be inclined to think that there is a crack in the exhaust valve seating, or the valve stem is bent, preventing the head of the valve making a gas tight joint all round the seating. Perhaps after a little further running, the rings will be in a better condition, and the compression will improve. Are you sure that the carburetter is wet with petrol, as the moisture may be due to condensation? If it is due to moisture in the air condensed on carburetter you should fit a warming pipe from the cylinder to the carburetter. It just depends how far the carburetter is placed from the cylinder and if in an exposed position. You might try fitting a slightly smaller jet. The machine should do about eighty or ninety miles to the gallon.

Magnetos and Slow Running.

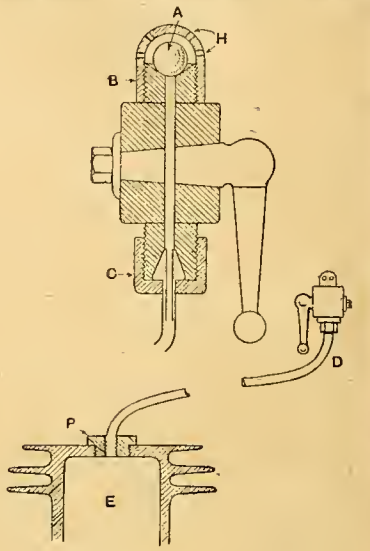
[?] I have a single-cylinder motor cycle with dual ignition, but I cannot start the engine on magneto at all. The machine has to be started on the accumulator, but runs beautifully on the magneto when started. Kindly let me know what is wrong. Also let me know the proper way of timing engine and magneto.—D.P.J.

To start the engine with magneto ignition it is necessary for the sparking plug points to be separated about $\frac{1}{50}$in; in other words, roughly speaking, as close together as possible without touching. The contact breaker points must be quite clean and breaking sharply. Also exclude as much air as possible from the carburetter. Sometimes in cold weather it is even necessary to restrict the fixed air supply by means of a shutter or other device. Secondly, to advance the magneto almost to its fullest limit. As regards timing, we refer you to previous hints in these columns, to "Motor Cycles and How to Manage Them," and to the magneto makers' booklet.

READERS' REPLIES.

Half Compression Device for Easy Starting.

I notice two enquiries, signed "R.L.R." and "G.K.E.," asking about a half-compression device for easy starting and slow running. I have worked out an idea, and have just fitted same to my machine. It answers



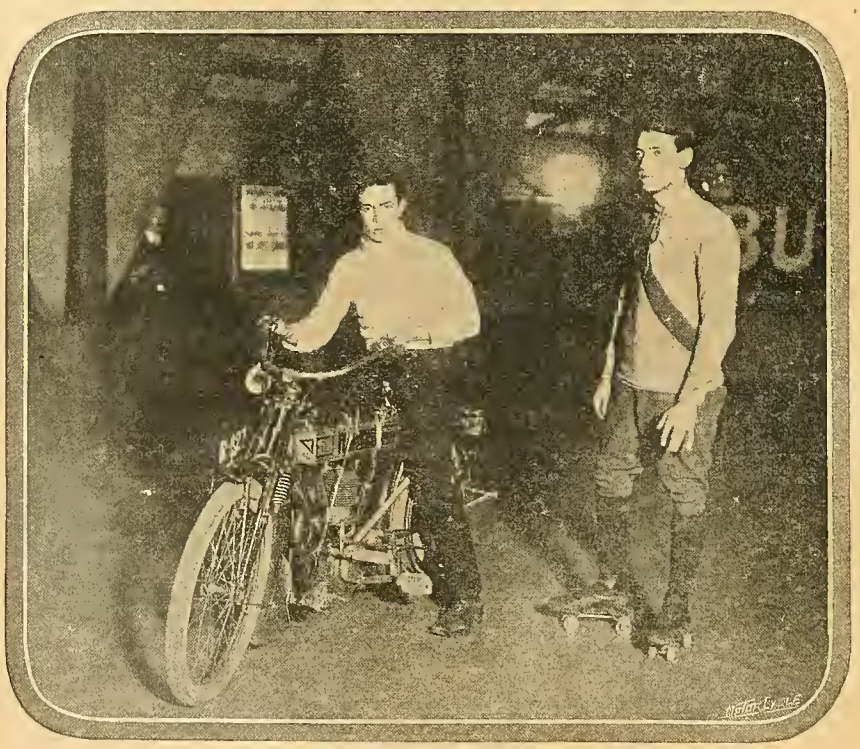
A. Ball valve.
B. Cap to retain ball.
H. 1/32 holes in cap.
C. Union.
D. Tap and tube attached to frame.
E. Cylinder.
P. Screwed plug in cylinder.

capitally on the stand, but have not yet had an opportunity to try it on the road. The arrangement is very simple, consisting of a plug screwed in top of cylinder, a 1-16in. bore brass pipe screwed into the plug, and led to any convenient part of frame, where it is connected by union joint to a small tap with a non-return ball valve in the top. This is clipped to frame tube, so that the tap can be manipulated from saddle. With tap closed the drive is, of course, as usual. With this arrangement I can start the engine without touching exhaust valve lifter. The operation is as follows: On the suction stroke the engine takes a full charge of gas, the ball valve preventing any air being drawn in, and on the compression stroke enough charge escapes through the valve to allow engine to turn over. On the firing stroke a little more of the exploded charge escapes, making the drive very easy. The accompanying sketch will explain the idea.—T. GRUNDY.

A Licence Claim.

A Doctor changes from Car to Motor Cycle and regains Licence Fee.

With regard to the query of mine and your reply, which you published on November 24th, *re* motor licence, I should like to tell you that the authorities have at last made up their minds to grant me a free licence and have refunded me 10s. 6d. This is practically what your legal adviser said was my due. With thanks to you.—MEDICUS PERPLEXUS.



MOTOR CYCLIST v. ROLLER SKATER.

At the Premier Skating Rink, Chesterfield, Lawrence Smith (3½ Bradbury) raced Godfrey Heath, the rink cup holder (also a motor cyclist), over a distance of ¾ mile, *i.e.*, twelve laps. Smith won by a couple of yards. Other races of a similar nature are to be held at the same rink.

THE MOTOR CYCLE

Vol. 9. No. 407. Jan. 12th, 1911.

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New Quarterly Trials Rules.

THE regulations for the A.C.U. (London Centre) Quarterly Trials are now before us, and a few criticisms concerning them will be of interest. In the first place, there will be no markings. The machines will be expected to fulfil certain requirements and to execute a certain task. Those that do so will gain a first class certificate, and those that do not will get a certificate on which details as to what they have done will be recorded. This certainly simplifies matters, and is an arrangement which should work well.

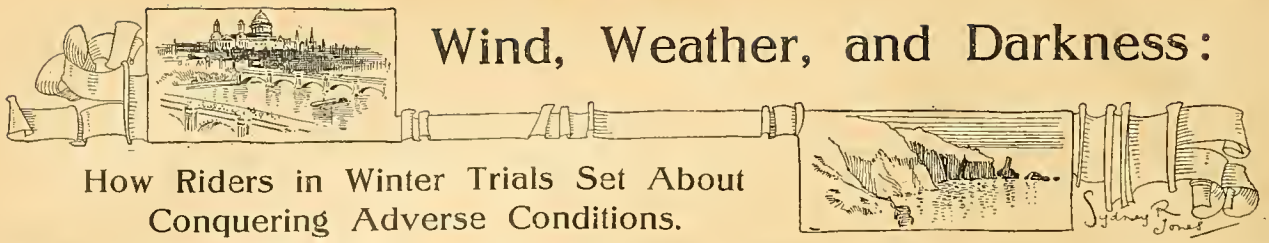
As regards the necessary equipment with which a machine must be provided to gain the highest award, it is stated, among other things, that a free engine or variable gear must be fitted in all trials after that held on 28th inst. This is a point which will evoke discontent in certain directions, chiefly from amateur entrants. As nearly all prominent makers fit either or both of these devices, no hardship will devolve upon them, but the private owner who is a fixed gear enthusiast will undoubtedly grumble.

Now he must bear in mind that the A.C.U., while gladly welcoming the private owner, does not run these trials solely for his benefit. Its object is to improve the modern motor bicycle, and to render it suitable for young and old alike. And just as in the past the A.C.U. has improved the modern mount by insisting that ample sized tyres, wide mudguards, stands and luggage carriers, good silencers, and other necessary adjuncts must be fitted, so it is wisely determined to continue this good work.

For many years there have been variable gears, but comparatively few of these have been extensively exploited, and to test to the uttermost all those that are on the market this rule has been drawn up. It is a step which will call for criticism, but it is the right one, and we admire the boldness and enterprise of the Union in attempting to carry it out.

As regards the hill tests, for the first time the competitors will be required to ascend the hills with hot engines as in touring. We have urged this rule time after time, and it is undoubtedly as it should be.

We are glad to see that an aggregate cup is again being offered, and below we give the conditions under which it will be awarded. At the end of the year a silver cup will be awarded to the driver of the machine which has ascended the timed hills *closest to the set standard*, subject to his having obtained four first class certificates. The following will be the standards: For passenger machines, 15 m.p.h.; for machines with engines not exceeding 300 c.c., 15 m.p.h.; for machines with engines above 300 c.c., 20 m.p.h. Now, unfortunately, this favours the variably geared machine unduly. It practically compels the use of the change-speed gear, and gives the machine no credit for a top speed climb even if it is capable of it. We look upon this in some ways as a retrograde step, as it favours the rider mounted on a machine which is barely capable of the standard speed, but who happens to be more expert than his fellow competitors in gauging the correct speed at which he is travelling. All machines must climb the test hills to gain the A1 certificate, but they should be made to do so at their best speed. Far better would it be, in our opinion, to base the award on the best formula performances on all the test hills throughout the year. Then would the prize be given to the machine which was best on merit, and not to the rider who is the most skilful judge of speed.



Wind, Weather, and Darkness:

How Riders in Winter Trials Set About Conquering Adverse Conditions.

IN one sense the winter trials have been undoubtedly a fine testimonial to the strength and reliability of the motor cycle, but there is another aspect of the question which cannot fail to lead one to the conclusion that, although the motor cycle is persistently claimed to be *par excellence* an all-weather machine, in reality, unless it is provided with special fittings to keep off mud, etc., it is very far short of this desirable consummation. Those manufacturers who fondly imagine

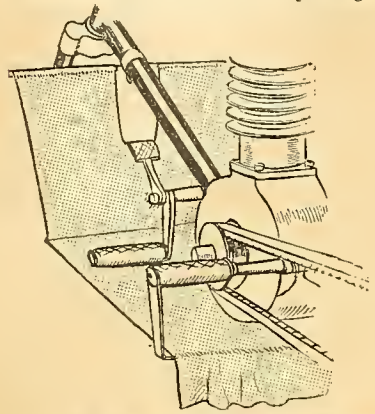


Fig. 1. An effective but somewhat unsightly mackintosh mud shield fitted to a Bradbury.

that they are marketing a machine that is capable of going anywhere in any weather would have had their opinions badly shaken if they had paid a visit to the Bell Hotel, Hounslow, on the nights of December 26th and 27th last. Here was to be seen, in concrete form, a wonderful collection of riders' opinions as to the weather-proofness of their mounts, and if these opinions are to be trusted (and they generally are when it is a real case of practising what one preaches) hardly any make of modern motor cycle is to be considered capable of doing twenty-four hours' winter plugging, mostly through the dark, with any degree of comfort to the rider, without several additional mudguarding devices, which are not standardised by the makers.

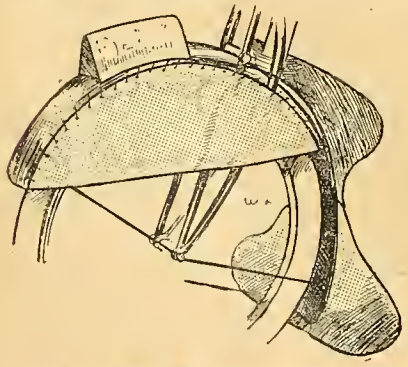


Fig. 2.—Leather side extensions fitted to the front guard of Alan Hill's Rudge-Whitworth.

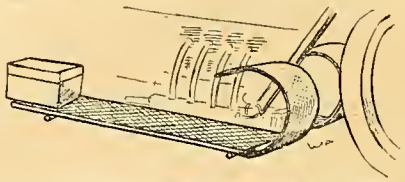


Fig. 3.—Sledge shaped foot protectors which were used on H. F. Hillar's four-cylinder F.N.

This, we think, is a fair conclusion, in view of the fact that about 90% of the motor cycles engaged in the M.C.C. run had furnished their machines with some additional, and, apparently, badly needed, form of mudguard, to protect either the rider, the engine, or the transmission.

A notable proportion, also, found it necessary, or advisable, to introduce a shield to protect the carburetter alike from mud splashings (which might work their way in and spoil the action of the devices for controlling air and gas), and from cold air, frost, or snow. The question asked naturally is, can a machine be described as an all-weather one if it is without such devices, and if so, why?

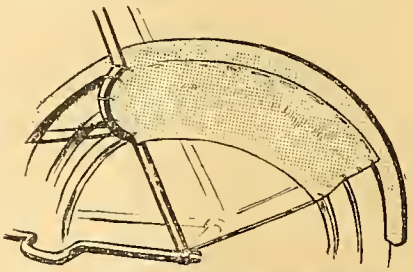


Fig. 4.—A special belt guard made from a strip of leather and stitched with fine copper wire to the rear mudguard of A. Baker White's Trump-Jap.

True it is that the carburetter shields were decidedly in the minority, and to all appearances did not produce any material advantages, but the fact that expert riders of long experience considered them worth fitting is extremely instructive.

A Strong Hint.

With scarcely any exception every rider showed his tender regard for the belt drive by making special efforts to show that the builder of the machine was evidently unaware that belts do not drive at their best when smothered in mud and wet. It will be a pity if manufacturers in general allow this strong hint to escape them.

Lamp manufacturers, too, might have acquired some useful information on Boxing Night if they had taken the trouble to look in at Hounslow. Scarcely a rider had sufficient confidence in any make of lamp to rely upon it and it alone. Practically every machine was fitted with two separate and independent head lamps, generally involving four generators, whilst one rider even had five, but one of them was rigged up for use in case of roadside repairs having to be done. As may be imagined, the generators looked like so many glittering fruits growing on a tree, which literally sprouted accessories of every kind.

The general result, therefore, was that the machines one and all exhibited themselves in the worst possible light. Smothered with a maze of projecting parts, and disfigured with hastily constructed flaps and the like, every one looked like some complex mechanism which had been taken out of its case and very badly handled in the process. This state of affairs is rather disappointing, considering that the motor cycle of to-day is the product of over fifteen years of development, and it is not, therefore, surprising to find the opinion expressed that but for the magneto, the spray carburetter, and handle-bar control, the standard machine of to-day is outwardly little changed from its six or seven year old brother. At least one can complain with some justice that it is very little more weather-proof, if any, yet the wicked old English climate remains as villainous as ever it was.

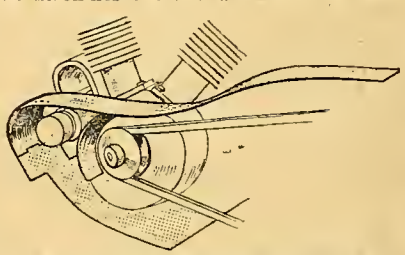


Fig. 5.—The neat and effective Moto-Reve magneto and belt guard arrangement which is to be offered to all purchasers of these machines at a moderate extra cost.

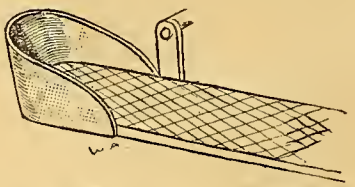


Fig. 6.—The footboards of J. W. Woodhouse's Caltnorpe were provided with toe-guards.

What with the bustle, the darkness, and the rain of Boxing Night, in the yard of the Bell, making sketches of details was not the easiest thing in the

Wind, Weather, and Darkness.—

world, but the accompanying ones, although rough, may indicate the lines along which riders evidently expect

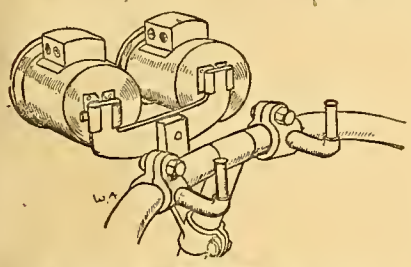


Fig. 7.—A smart illuminating idea. The two small lamps gave a splendid light, and were fed by independent generators fitted on the handle-bar.

manufacturers to develop the weather-proofing of their machines. It is, of course, quite impossible to describe everything of this kind, but the appended sketches are thoroughly representative.

Some of the Weather-proofing Devices.

Fig. 1 is a most effective mud-shield fitted to a Bradbury machine—as effective, in fact, as it is ugly. It was made of mackintosh cloth stretched from a cross piece clipped to the diagonal frame tube, carried thence to a second cross piece just in front of the forward pair of footrests, and then brought round to a third depending from the rear footrests, and finally terminating in a "skirt," which was allowed to come down close to the road.

Fig. 2 represents a leather mudguard rigged up on a Rudge-Whitworth. The semi-circular side-curtains were made of black leather fixed into the permanent mudguard with copper wire. At the

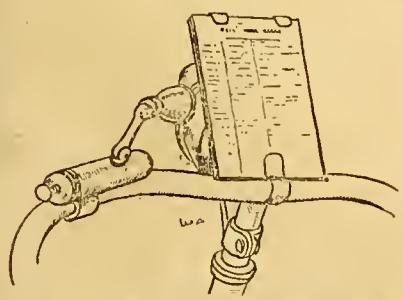


Fig. 8.—A simple method of illuminating the route card. This was fitted to H. F. Millar's F.N.

back were two mudflaps of large proportions, the upper one being upside down.

The sledge-like footboard shields were to be seen on a four-cylinder F.N. The extensions were apparently made out of stiff linoleum, and seemed to answer their purpose admirably without robbing the rider's feet of their freedom in any way.

A. Baker-White's Trump-Jap was furnished with a special belt guard on the back wheel, consisting of a strip of stiff leather held down to the fixed metal guard with stitches of copper wire. This guard would to a certain extent keep rain off the belt, but it might cause more mud than usual to be thrown thereon by the back tyre.

Cleverly Arranged Mudguards.

Fig. 5 shows the neat and effective Moto-Rêve arrangement which will be incorporated in the machine as a standard fitment at a slight extra cost. It comprised a combined guard for the belt and belt pulleys, and a separate one for the magneto which was continued to form an under-shield running completely under the engine. The last-named was hinged as shown, and the rear end of the belt guard attached to the three-cornered spare petrol tank placed under and behind the saddle-pillar. It will be seen that this attachment in no way interfered with the accessibility of any part of the machine, and it was one of the few which did not detract from the general appearance. The existing attachments on the engine, etc., were used in every case for supporting these cleverly arranged guards.

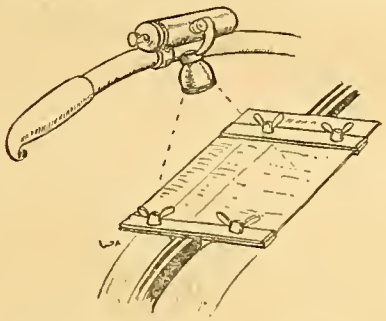


Fig. 9. A more elaborate arrangement for lighting a route card.

The footboards on J. W. Woodhouse's Calthorpe were furnished with the neat toe-guards illustrated in fig. 6. This idea is not so good as fig. 3, as it prevents the foot being slid off the board sideways and involves its being lifted clear.

F. A. McNab's double head lamp notion is shown in sketch No. 7. The two small lens-mirror lamps appeared to give a tremendous amount of light, though if one had been focussed for long-distance work and the other for short a still better effect might have been obtained. The figure also shows how the independent generators were fitted to the handle-bar.

H. F. Millar, whose F.N. was provided with the footguards indicated in fig. 3, arranged his route card and its electric illuminator as in fig. 8. The card was clipped to the handle-bar and leant against the head lamp. In contrast to this notion Alan Hill's Rudge-Whitworth was rigged up as shown in fig. 9, in which the card was clipped to the top bar. The little self-contained electric inspection lamps shown in these

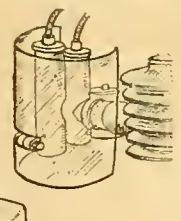


Fig. 10.—Transparent carburetter protector on C. C. Cooke's Triumph.

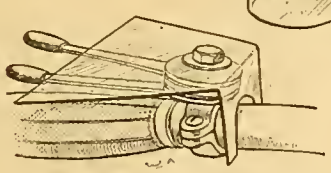


Fig. 11.—C. C. Cooke's control lever cover.

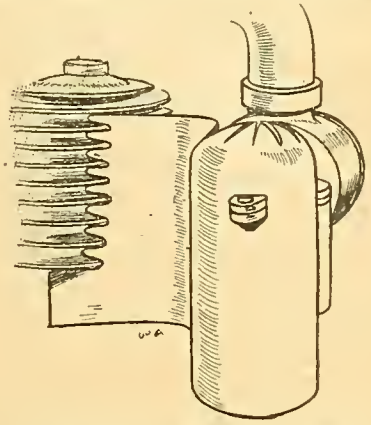


Fig. 12.—Another and somewhat neater carburetter shield on R. O. Clark's 2¼ h.p. F.N. Note how the shield is cut to fit snugly around the radiators.

two figures were extremely popular, and were used on a large number of machines to illuminate speedometers, watches, and route cards.

Figs. 10 and 11 illustrate two instances of the ingenuity of C. C. Cooke. The first is a neat celluloid shield to the handle-bar control, which is designed to keep out wet and grit from the quadrant, and also to a certain extent to keep the fingers dry. The second is a celluloid covering to protect the carburetter, a second function being to direct a stream of hot air on to the spraying and float chambers. Mica would be a better material in this case, as in the event of a fire back through the carburetter the celluloid would probably ignite. Such a fitment would be valued for summer riding.

A Snug Carburetter Cover.

A similar sort of carburetter shield was fitted to R. O. Clark's 2¼ h.p. shaft-driven F.N. (fig. 12.) Tin was used in this case, and the shield was specially serrated so as to fit snugly against the cylinder fins. In this way the carburetter was kept very cosy indeed, and, as a matter of fact, the little shield was by no means ugly. Fear that frost might cause trouble with a separate acetylene generator led to the device shown in fig. 13 being employed upon S. Sawers's 3½ h.p. Premier. The cover was mackintosh cloth tied round the generator as shown, and left sufficiently loose at the top to allow the tap to be twiddled through the fabric. Some such cover might be used on all separate generators with advantage, if only for the purpose of keeping them clean.

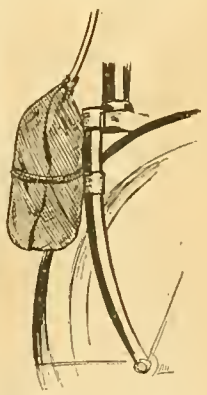
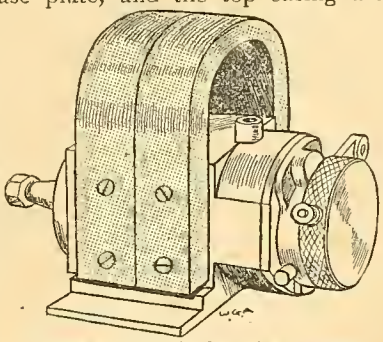


Fig. 13.—A generator "cosy" made of mackintosh cloth. This ingenious device was fitted to S. Sawers' 3½ h.p. Premier and would be useful at all times to keep the generator clean.

THE U.H. MAGNETO.

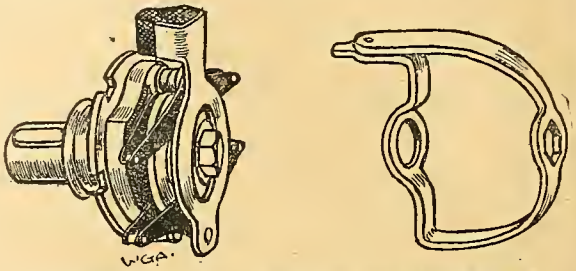
QUITE an interesting magneto, which is rapidly becoming popular among motor cycle manufacturers, is the U.H., sold by Messrs. G. A. Claus and Co., 83, Mortimer Street, W.

The magneto possesses numerous interesting features. The end plates, base plate, and the top casing are cast in one with the pole shoes, so that, as there is no need to have joining screws, there is no loss of magnetism and the machine is considerably more efficient. This method of manufacture also tends to render the magneto almost entirely waterproof, and its success on the three A.J.S. machines in the trying London to Exeter run is a proof that the makers' attempts in this direction have been successful.



The U.H. magneto with base plate, armature tunnel, &c., cast in one piece.

The contact breaker stands far enough out from the end of the armature to allow the rider to see that the points break properly when the cover is off, and the accompanying illustrations show the peculiar construction of the contact breaker, which differs from all other types. It possesses the advantage of being very accessible, and the neat system of springs causes the movement of the platinum points to have practically a parallel motion. The contact breaker cover springs into position by the aid of two balls, which are pressed outward by two springs. The condenser is accessible, being reached by merely removing four screws.



The U.H. contact breaker with special tool for setting platinum contacts by rotating the notched ring at the back of contact breaker body.

The armature runs on ball bearings, and the spaces between the balls being packed with vaseline render further lubrication unnecessary for some considerable time. These are the chief points in which the U.H. magneto differs from other makes. In all other respects it works on accepted lines. It is moreover well made and well finished.

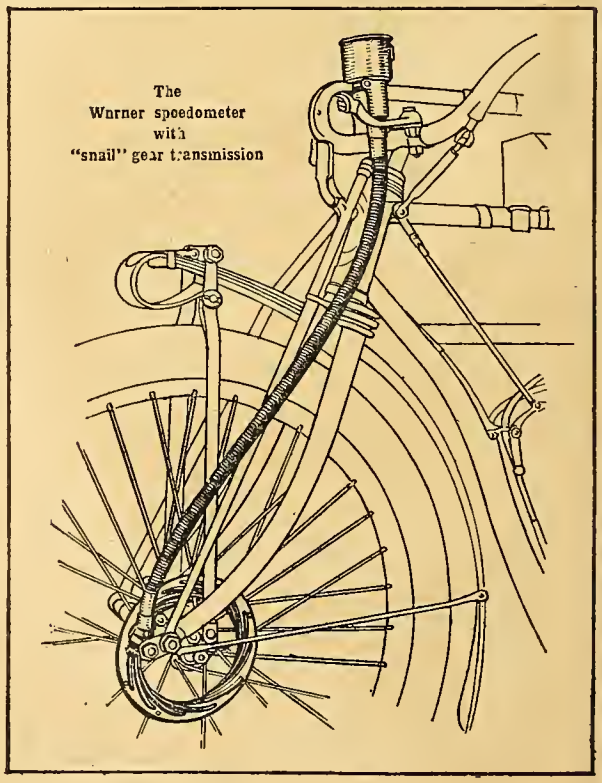
The tool shown in the illustration, depicting the contact breaker, serves to remove the nut holding the contact breaker and to adjust the platinum points by moving the notched disc shown behind the contact breaker base plate. The movement of this disc brings the fixed platinum point nearer to, or farther away from, the one which moves.

At the present time the U.H. magneto is fitted to Roc, Wolf, and A.J.S. motor cycles.

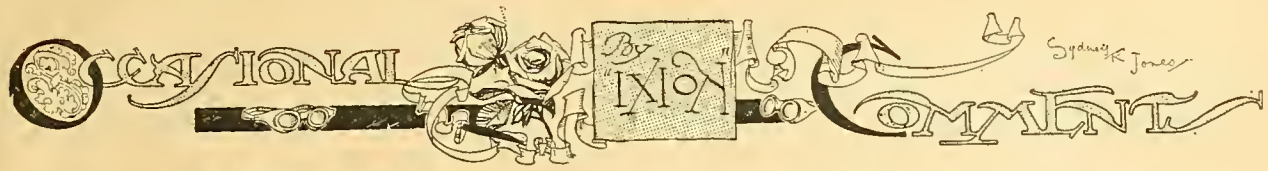
THE LATEST SPEEDOMETER DRIVE.

THE Warner Instrument Co., Wisconsin, U.S.A., are responsible for a new motor cycle speedometer driven by what they term a "snail" gear.

The accompanying line drawing shows the instrument fitted to an Indian. The large gear wheel bolted to the steering wheel of the bicycle is provided with long spiral grooves, which allow the small driving pinion a certain range of movement without coming out of gear. This amount of movement is greater than the vertical play of the spring fork; the gear wheels will, therefore, always remain in mesh regardless of the state of the road surface. Another advantage of the "snail" gear is its silence in comparison with gears of the spur or bevel type. The speedometer is operated by means of magnetism as follows: A ring magnet mounted on ball bearings is driven by a flexible shaft. This revolving magnet effects a pull on a balanced floating aluminium dial, the degree of drag being in proportion to the speed of the magnet, while a hair spring acts as a brake against the magnetic pull. The amount of rotation indicates miles per hour on a scale attached to the dial. In addition to indicating speed, mileage is recorded by means of a Veeder odometer which registers up to 10,000 miles with a 100 miles trip attachment. Speed and distance may be ascertained by night, a small electric light with nickelled reflector being fitted. Of course, in the case of magneto ignited machines, this necessitates a small battery being carried. The makers of Warner car speedometers in this country are the Electric Ordnance and Accessories Co., Birmingham.



The Warner speedometer with "snail" gear transmission



Frame Design.

Nobody need be alarmed about alleged weaknesses in the 1911 motor bicycle frames which possess bent top tubes. It is true that these tubes are normally in compression, and that straight tubes would be stronger. But motor cycle frames—like pedal cycle frames—are all constructed with enormous reserves of strength. The best pedal cycle frames have a reserve of strength amounting to, perhaps, as much as 500% in excess of the demands to be expected in normal use, and the same is true of motor cycle frames.

In many years' experience I have only encountered two troubles with motor cycle frames. The first was front fork fracture, due to crystallisation; this danger exists with the best tubing and the best designs, but need not be dreaded until the machine has done a lot of work, probably 100,000 miles; in practice it may be met by fitting a new front fork if a machine is kept beyond the third year. The second was a frame fracture, due to a bad design throwing too heavy a strain upon a pair of brazed lugs; and such designs are no longer made.

I have never known a clean break of a comparatively new tube, due to weakness of the tubing or errors in design. The bent top tubes figuring on many stands at Olympia are enormously stronger than actual necessity demands. Moreover, I think the bend is justifiable. It is difficult by any alternative design to obtain a shorter leg reach between saddle and ground than 30in., and this is longer than many diminutive riders approve. The bend permits of a lower saddle position than any parallel tube alternative, and the only mechanical expedient is to be found in the straight top tube steeply sloped backwards, as on the old Zenith frame.

Cycle Couplers.

It is possible that the cycle coupler may be revived, as it is a cheap and light alternative to the detachable sidecar. Quite a number of readers have sent me enquiries about such devices of late, and a paragraph relating to my experiences with them may be interesting. The advantages are obvious. The coupled cycle seldom needs buying—sweetheart has one of her own, and the tiebars cost not more than £3, which is not half the price of a medium grade sidecar.

The combination is considerably lighter than a sidecar, and can be attached to low-powered motor cycles, which would curl up badly on hills if loaded with a sidecar, while the passenger can use her pedals on steep hills, and almost propel her own weight. Starting, too, is simple and easy.

On the other hand, 1½in. push cycle tyres and light practically springless saddles possess little if any comfort at motor cycling speeds. There is an entire absence of protection from mud, wind, and weather generally.

Worst of all, the steering trouble is very real. All the cycle couplers I have tried leave the passenger the power to interfere with the steering, and in emergencies, particularly when one has had little or no practice with the combination, one has to shout "Don't steer!" Even then the average girl usually forgets simply to use her handle-bar as a support for her wrists, and what is really wanted is a special bicycle with a dummy non-steering bar, and an ultra-high pedalling gear or multi-speed hub.

Winter Reliability Trials.

Thanks to the weather, the Christmas reliability trials, at any rate in the South, failed to answer their purpose. Several competitors assure me that, though they encountered lots of delays, they were able to secure their gold medals without trouble, owing to the low speed average demanded. One rider in particular lost several hours, through various delays, both pneumatic and mechanical, but finished dead on time. The absence of intermediate checks and his own ability as a "greasy rider" enabled him to ride at 30 m.p.h. for prolonged distances, and thus cover in each subsequent hour the distance for which two hours were allotted. He and others assert that an 18 m.p.h. or 20 m.p.h. schedule is desirable. I beg to differ from them. Another winter the presence of deep snow might make a 15 m.p.h. schedule impossibly exacting.

These runs are partly sociable, partly educative, partly testing. In some seasons they will be simple enough, as they were this year, for any rider who can handle a machine deftly on grease. In no season will they be as easy as the London to Edinburgh, and they will teach many men to become winter riders.

Many a timid man hesitates to venture out on a long lonely winter ride, but the same rider will enter when he is sure of the company of fifty others, and the ease with which they negotiate treacherous surfaces will inspire him.

A HAPPY QUARTETTE.
Sons and daughters of W. L. Jardine, Midlothian.

FORCED INDUCTION.

IN course of conversation with a prominent manufacturer at the Show, he gave it as his opinion that we should see forced induction and forced lubrication on racing motor cycles this year. An account, therefore, of some experiments which have been carried out with forced induction may be of interest to motor cyclists.

There are, generally speaking, two different ways of forcing the charge of petrol gas into the engine. The most simple, and that most generally used, consists of a large cone-shaped funnel fixed to the main air intake of the carburetter and projecting in the direction of the machine's travel; the draught, increasing with the speed of the machine, blows through the carburetter and forces the mixture into the induction pipe. This works well on those carburetters which draw most of their air supply through one opening, *e.g.*, the semi-automatic Amac. The second way is to fit a fan, driven by the engine and arranged to blow air through the carburetter at a high velocity.

Advantages Explained.

Three benefits which follow the adoption of forced induction are:

(1.) The removing of negative pressure, the charge being always ready mixed in the induction pipe.

(2.) Increase of compression with speed of engine.

(3.) A cooler running engine, the forced charge scavenging the cylinder.

For the removal of negative pressure a wind scoop will give sufficient draught, but to raise the compression appreciably a powerful high speed fan must be employed. It may not be obvious how compression can be raised by forcing the charge, but this is clear when we consider that the charge is admitted at a higher pressure than the atmosphere the faster the fan runs, but is still compressed in the same ratio whether the fan is fitted or not.

For running with forced induction the inlet valve should open much earlier than usual (see valve diagram, fig. 4), in order that the first part of the forced incoming charge should blow out the residue of exhaust gas left in the combustion space when the piston is at the top of its stroke. This gives an appreciably more efficient and cooler running engine.

The apparatus can be arranged in several different ways. In fig. 1 we have a centrifugal fan driven by a pulley fitted to the driving sprocket for the magneto. The fan is blowing air into a 1911 semi-automatic Amac carburetter. (This carburetter is very suitable, as nearly all the air is drawn through one opening.) A reservoir working on the principle of the modern gasometer is fitted between carburetter and engine, into which the gas is blown and stored until the inlet valve opens. (For the purpose of experiment the writer would suggest that a football bladder be used.) The fan should run at about 2,000 revolutions per minute, and should have close fitting blades.

Fig. 2 shows another arrangement. The intake of the fan is fixed on the carburetter, and sucks mixture through it, thoroughly stirs up the charge, and delivers it, under pressure, to the cylinder. This arrangement has not yet been tested by the writer.

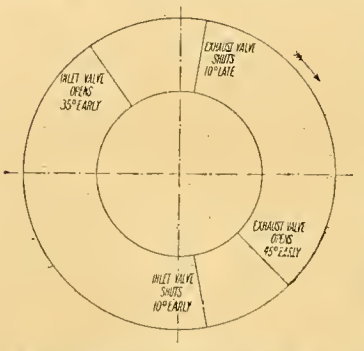


Fig. 4.—Valve diagram for use with forced induction. This shows timing of valves for quickly opening valves only; for slow opening the amount of lead on both valves should be increased.

Fig. 3 shows an arrangement which, combined with an air scoop as described at the beginning of this article, should give very good results. Air under slight pressure is forced into the carburetter. The mixture is then thoroughly threshed up by a small fan as shown, and should be very finely divided when it enters the cylinders. This arrangement is being tested by a prominent Scottish motor cyclist on his 7-9 h.p. Rex.

Care should be taken when fitting a fan, as in fig. 1, to see that the pulleys are fitted in line. The con-

THREE DIFFERENT METHODS OF USING FORCED FEED ON MOTOR CYCLE ENGINES BY MEANS OF A CENTRIFUGAL FAN.

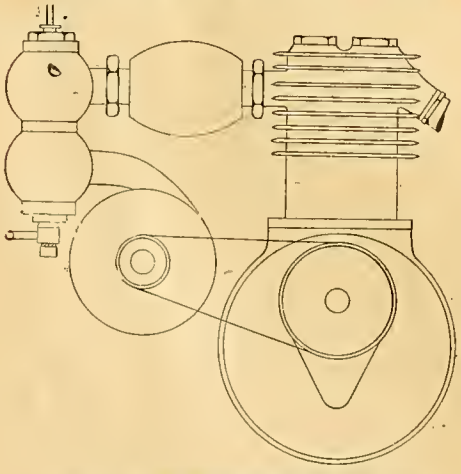


Fig. 1.—A centrifugal fan, driven by a pulley fitted on the magneto driving sprocket, is here shown blowing air into a 1911 Amac carburetter.

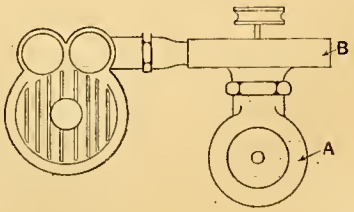


Fig. 2.—Another arrangement of the fan for forced induction. The fan intake is fitted on the carburetter and the mixture is sucked through it.

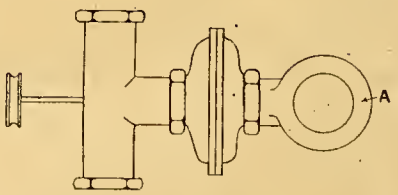


Fig. 3.—This device is being tested by a prominent Scottish motor cyclist on his 7 h.p. twin Rex. F. Fan. CC. Carburetter.

Forced Induction.—

nection from fan to carburetter can easily be made of some flexible material if the fan and carburetter intake do not register correctly. Any carburetter can be made suitable by connecting bottom air and adjustable air by means of piping, being always careful that the bends are not so sharp as to cause eddies. The fan can be driven by cheap belting as used on fretwork machines.

How Forced Induction Affects Control.

Readers who start experimenting with forced induction must not be surprised to find the control a little strange. A perfect mixture can easily be obtained when running all out, but at slow speeds the control is not, as a rule, at all easy. This, of course, depends to some considerable extent on the design of the carburetter. Probably a machine which before could be throttled down perfectly will refuse to run under 20 m.p.h., as in the modern handle-bar controlled carburetter the throttle and air slides are held down by springs which were not intended to work against pressure.

It is surprising that, although forced induction has been used most successfully for car racing, it has never, so far as the writer is aware, aided any motor cyclist to record honours. Probably the reason for this is the craze for lightness and short wheelbase. Looking at some track racers it seems difficult to find room for the carburetter, much less a fan and gas bag!

W.M.B.

AUTO CYCLE UNION NEWS.

THE NEW QUARTERLY TRIAL COURSE.—At a recent committee meeting of the Auto Cycle Union a vote of thanks was passed to Messrs. E. M. P. Boileau, J. W. G. Brooker, H. G. Cove, and Victor Hart for their assistance in surveying the course for the January trial. Messrs. H. G. Cove and D. K. Hall were appointed judges for all the Quarterly Trials.

RUNABOUTS.—A resolution was passed to the effect that this Union does not cater for four-wheeled vehicles.

PERMITS.—A permit was granted to the Midland Centre to run an open hill-climb on Wenlock Edge on Saturday, July 15th.

Grease on Tramway Lines.

A.C.U. SOLICITOR'S OPINION.—The attention of the A.C.U. was recently called to the nefarious practice indulged in by certain tramway companies in spreading grease on the rails at sharp corners, thereby endangering the lives of motor cyclists and others. Concerning this question, Mr. G. D. Dean, solicitor to the Auto Cycle Union, has written as follows: "If tramway companies place grease on their tramlines and it can be clearly shown as the result that through grease being placed there damage is sustained by a motor cyclist, or his motor cycle, he would in my view have an undoubted remedy against the tramway company for the damage so sustained. I do not, however, know of any Act under which police court proceedings could be taken against the tramway company in a criminal court, unless it were for the obstruction of the highway."

ACCIDENT TO A MEMBER OF THE A.C.U. COMMITTEE.—We regret to learn that Mr. E. P. Hawkins, who represents the private members on the A.C.U. Committee, has broken his leg, and an operation has been necessary. A vote of sympathy was passed in his favour at a recent committee meeting.

RESIGNATION FROM COMMITTEE.—Mr. H. A. Wildy has, through pressure of work, been compelled to resign his seat on the A.C.U. committee. He represented the Coventry and Warwickshire Motor Club.

AFFILIATION.—The North Canterbury (New Zealand) Motor Cyclists' Club has been affiliated to the A.C.U. This is the first occasion on which a colonial club has become affiliated to the governing body, and its application was most cordially accepted.

Annual Dinner.

CHANGE OF DATE.—The annual dinner will be held at the Waldorf Hotel. The date announced in the R.A.C. *Journal* was given as Thursday, January 26th, but we understand that the secretary of the A.C.U. has been instructed to select a Saturday in January for the occasion if it can be arranged. Unfortunately H.S.H. the Duke of Teck, the A.C.U. president, is unable to take the chair, and Mr. Robert Todd, the chairman, will fill the position.

LAMP TRIALS AT BROOKLANDS.

Several lamp manufacturers have asked us for a set of rules governing the A.C.U. Lamp Trials at Brooklands on Thursday, February 8th. We are now in a position to give the general lines upon which these trials will be carried out:

1. A practical riding test with lamp lighted for two hours.
2. The lamps will then be tested photometrically for intensity of central rays, side illumination, and illumination of back rays.

   NOTE.—Adjustments in respect to height will not be permitted in the course of the trial, but the angle of elevation can be varied for the photometric tests.
3. At the conclusion of the photometric tests, a further two hours' riding test will take place, less the time occupied in the photometric tests. The total time of burning will be exactly four hours.

   NOTE.—The judges may, at their discretion, take further photometric or other tests at the end of the riding test.
4. Adjustments of any kind whatever will not be permitted to the lamp or generator after the official start.
5. Utility of combination will be taken into consideration in awarding marks.
6. The price of the lamp, etc., will not be taken into consideration in awarding marks.
7. Manufacturers may not enter more than two lamps of the same type.
8. Each entry must be for a complete lamp and generator (acetylene, electric, or oil).
9. Entrance fee two guineas per lamp.
10. Entries close Saturday, 28th January, to the Secretary A.C.U., 18, Down Street, Piccadilly, W.
11. Each entrant to provide a motor bicycle, and also a driver for same.

    NOTE.—Each machine must be driven at an average speed of twenty-five miles per hour throughout the test.
12. Each lamp will be weighed complete, together with its supply of carbide, oil, or electric accumulators, as the case may be.
13. In awarding marks the judges will take into consideration—weight for illumination, ease of cleaning, facility for charging and recharging generators, absence of liability to rattle, fewness of parts, quality of hinges, clasps supporting sockets, etc., and general method of assembling the lamp.
14. The Auto Cycle Union will supply a definite quantity of carbide, which must be used for the trial. Entrants of lamps using oil, electricity, or dissolved acetylene, must provide their own supplies.
15. All lamps must be delivered at the judges' enclosure, at Brooklands Track, by 3 p.m. on Thursday, 9th February, 1911, and representatives of entrants must be ready to start on their motor bicycles at 4.30 p.m.

SPORTSMAN OR POTTERER?

A REPLY TO "IXION."

THERE have always been found reactionaries to oppose mechanical progress of any sort, and to base their opposition on the danger, the unreliability, and the complication of the new invention, but I must confess that I have never until now found one who would object to improvements simply because they do away with the dangerous, the unreliable, and the complicated. Yet, in effect, this is the line that "Ixion" takes up.

Personally, I must admit at once that I am a "potterer," but I cannot conceive why I may not be both a potterer and a sportsman. I bought an expensive bicycle—a 5 h.p. Indian—a short time ago, after riding a lightweight, with the intention of getting a machine which would not break down. I was successful, and I have no desire to push it up hills, nor have I any enthusiasm for making amateur repairs at inconvenient times. If I have, as "Ixion" says, a machine which "is cheap to run, comfortable to sit on in all weathers, keeps itself clean, climbs all hills without a falter, is fast on dry roads, but slow at all costs when grease is out, and starts from my doorstep without fuss or obstinacy," that is all I want, and I certainly take no more than a casual interest in what races it has won or lost. I want to know what my bicycle will do for me, not what a specially tuned-up mount will do for an infinitely more skilled and experienced trade rider. What conceivable pleasure, profit, or honour there can be in having a motor bicycle which makes one unspeakably dirty, is positively dangerous in grease, will not start easily, and is generally unreliable (for this is, in effect, what "Ixion" asks for), I cannot imagine.

Why I have a Motor Cycle.

Like most people, presumably, I run a motor bicycle not to gain the experience of a mechanic or the exercise of a cart-horse, but for excitement and to get "there and back" with speed and certainty. I do not want to make repairs, I do not want to be held up on the road, nor do I want to run foolish and unnecessary risks. I want to know enough about the engine to deal with ordinary mishaps, but I should never tune it up myself if someone else would do it comparatively cheaply and with infinitely greater skill than I am ever likely to possess.

My ideal is a motor bicycle as perfect and as reliable as possible, and I should therefore welcome—supposing them quite efficient—a two-speed gear, a free engine, automatic carburation, fore and aft springing, weather-proof ignition, and automatic lubrication. With all deference to the greater experience of "Ixion," I cannot see why it is more "sporting" to pump oil into an engine than to let the engine pump it in for itself, or to be held up and clean a magneto which you could as easily have had cleaned before the start. Nor can I imagine why one should not eliminate vibration and be as comfortable as possible without becoming, *ipso facto*, a "potterer."

"Playing to the Gallery."

Indeed, this practice of courting difficulties in order to overcome them seems to me, so far from being sportsmanlike, to be on a par with the action of a fielder who waits till the last moment before he runs in for a catch, and thus makes it much harder. Such behaviour, "Ixion" will remember, is sometimes known as "playing to the gallery." Nowadays a motor cyclist is not necessarily a hero, nor should he aspire to be so considered just because he conquers terrors which he might have avoided.

In conclusion, I would add that if I ever happen to meet "Ixion" I shall be pleased to "potter" with him as fast and as far as he likes, in any weather and over any roads, in spite of the fact that I do not share his affection for what most rational people consider the obvious drawbacks of the motor cycle, but rather endeavour to protect myself against them.

DESMOND YOUNG.

DEPRECIATION AND REPAIRS £10 PER ANNUM.

MR. R. O. MITCHELL, of Messrs. Douglas and Oliver, 30, High Holborn. W.C., has just devised an attractive scheme which will undoubtedly appeal to many motor cyclists, particularly those who wish to know definitely before purchasing a motor cycle exactly what depreciation and repairs will cost. The firm undertakes to supply machines of high reputation, to maintain them for one year, and at the expiration of that period to allow the original price expended, less £10. By stating that it will maintain the machines it supplies, the firm means that it will garage free of charge in the Metropolis all mounts belonging to London residents should they so desire it, and to keep in running order all motor bicycles purchased, to execute all repairs necessitated either by ordinary wear and tear or by defects in manufacture, excepting to tyres and belts and to those necessitated by damage caused by collision or unfair usage.

Very often the owner of a motor bicycle experiences a breakage, which he ascribes to a defect in manufacture, but for which the manufacturer disclaims all responsibility, compelling the owner or his agent to pay the full price for the repair or the replacement of the broken parts. Now, in a case of this kind Messrs. Douglas and Oliver will replace the defective part or carry out the repair at once, without any question or delay. It will thus be seen that the scheme will prove a great convenience to all purchasers, who are absolutely certain if they avail themselves of it, as to how much their depreciation and repairs expenses will amount to.

Moreover, if at the expiration of the year the purchaser is so satisfied with his mount that he does not desire to change, the time of the contract may be extended to another year, at the end of which the original price less £20 will be allowed. The same facilities will also be offered to purchasers of second-hand machines, and if the above scheme is successful it will be extended to the provinces.

The scheme is under the care of an astute business man in Mr. Mitchell. Up to the present he has been best known to our readers as managing director of the Rom Tyre Co.

Messrs. Douglas and Oliver, who have just declared a further interim dividend of 5% (being at the rate of 20% per annum), will shortly open a depot in Geneva, a city in which large numbers of motor cycles are used.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Passenger Motor Cycles—Why Not Steam?

[5257.]—Regarding the discussion on four-wheeled passenger runabouts, can any reader explain why a light runabout driven by steam on the principle of the Compton steam car made by the David Smith Co., London, has not been proposed, as it seems to me that it would have fewer parts and be quite as efficient? AMATEUR.

Motor Cyclists Look to your Policies.

[5258.]—Referring to the recent letters *re* the matter of personal accident policies, including motor cycling, I may say that I took this matter up with the chief companies years ago and arranged with them that all my personal accident and sickness policies included motoring.

As showing the necessity of motor cyclists being insured themselves, as well as their machines, I may say two of my claims this week are—1, for fatal accident to motor cyclist £250; and 2, complete smash up of 5 h.p. motor cycle through a sideslip, claim £65.

When one considers the low premiums it is a wonder that any motor cyclist runs the risks himself.

ERNEST J. BASS.

Magnetos Behind the Cylinders.

[5259.]—I, in common with others, have been very amused at the statement made by a few motor cyclists, that the magneto at the back of the cylinder affects the steering. How people can be led to make such silly statements is beyond my, no doubt limited, range of imagination.

Undoubtedly, these gentlemen would evidently prefer to carry a magneto or a similar weight on the lamp bracket instead of on the carrier; also I have no doubt that they would not wear a heavy coat for fear of hitting something through the faulty steering of their machine. I do not think that the weight of even a passenger on the carrier makes much difference to the steering. I have myself found little or no alteration whatever after the first quarter of a mile.

These statements really cannot be made with any seriousness, although I notice that they were made at a lecture, which rather points to the fact that those who made them really believed them. I think you should send them your book "Motor Cycles and How to Manage Them."

MOTOSACOCHE, LIMITED.
OSBORNE L. DE LISSA.

Further Reply to the Challenge to Dutch Motor Cyclists.

[5260.]—Confirming my letter of 23rd ult. to the Editor of *The Motor Cycle* [published on page 22 of the last issue.—ED.] I beg to inform readers that at the last council meeting of the Dutch Motor Cycle Club it was stated that our 1911 programme is already too much overloaded, so that we are unable to organise a 1911 reliability trial for English and Dutch motor cyclists.

In any case the D.M.C.C. will organise an official club run to the Isle of Man; there I hope to meet my English motor brothers and to talk over a 1912 reliability run for teams of twelve riders, as suggested in *The Motor Cycle* of 29th ult., and organised by an official English motor cycle club.

Personally, I shall do my utmost to further the visit of English motor tourists and shall be pleased to keep them company here and to help them as much as possible.

I am very glad to note that there is a great interest in England in the doings of Continental riders, and can assure you of the same feeling on this side regarding the English motor cyclists.

Wishing all my English motor friends a happy 1911,

A. CITROEN KZN.,
Hon. sec., Dutch M.C.C.

Amsterdam.

Single Gears and Sidecars.

[5261.]—In your report of the London-Exeter Winter Run you state that several of the single-geared sidecars were in difficulties on the severe hills, Gibson's Bradbury being a notable exception.

Is it not a fact that the exception was the only single-geared sidecar in the run? I should take it so from the list of entries.

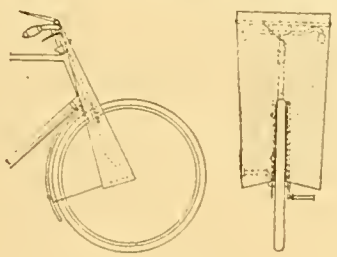
This would appear to be rather a showing-up for the two-speed gear in this case. We are always having the necessity of two-speed gears for passenger work rammed down our throats, so that it is refreshing to note that one single-speeder, and that of 3½ h.p., at least can hold its own.

SINGLE SPEED.

["Single Speed" should bear in mind that Hugh Gibson is an expert rider. On some hills that he can climb with a single gear the average touring rider would fail. All the same Mr. Gibson himself admits having had to shed his passenger on more than one occasion.—ED.]

A Roller Blind Mud Screen.

[5262.]—In answer to "Cantilever's" letter [No. 5202] and its accompanying illustration of a detachable weather guard, I heartily agree with the writer of the letter as to the usefulness of this form of guard, as I have used one since early in 1908, when I obtained provisional protection for a screen carried on a spring roller and extending down in front of the cycle.



As a matter of possible interest I enclose a small print showing one form of this guard fitted to a pedal cycle.

ALBERT F. COATES.

Winter Equipment.

[5263.]—I notice that you intend to devote space to descriptions of various London-Exeter competitors' equipment. The equipment of the machine I used in the above event, roughly, consisted of the following: The front wheel I had blocked entirely by means of removable aluminium side plates. The back wheel was encased in this manner on one side, and on the belt rim side I fitted a similar case which stood at the back side of the rim which is separate from wheel. Thus the belt rim was isolated completely from any dirt the wheel might throw on to it. But, in my humble opinion, the sides of the wheel are not the source whence all dirt is thrown on to the belt. I found by a series of experiments that the real offending point in this respect is at the bottom of the wheel where it engages with the road. I therefore fitted a shield which extended from the back mudguard stay to a point about 10in. further than the radius of the back wheel. To prove the effectiveness of this device, I might say that in the first twenty miles of the journey, when the roads were really wet, we were constantly passing competitors with their engines roaring away and the machine at a standstill, while we were buzzing along merrily on the top gear.

The handle-bar muffs which you referred to last week were made locally of stout leather 19in. wide at the large end, tapered to fit a ⅞in. handle-bar, and lined with sheep's wool. The advantage of stiff leather over the ordinary kind of muff can be appreciated when one has continual rain to encounter. As for comfort, they are the last word, and gloves are never required. GEORGE BROUGH.

Quads—A Warning.

[5264.]—The apparently growing fashion for four-wheeled motor "sulkies" leads me to utter a word of warning to designers, based upon my experience with "quads" for two, to wit, that a light four-wheeler will be far more tricky in its steering than a three-wheeler of similar wheelbase.

The old "quads" steered beautifully with a passenger in front, but when the driver was solus there was insufficient weight upon the front wheels to ensure the adhesion to the road necessary for good steering. On a quad without a front passenger I have slithered and gyrated all over a road in a dangerous fashion, whereas the same machine when converted to a tricycle would steer perfectly, because the single front wheel bore all the weight that had otherwise been divided between two wheels, and thus could cut through the mud and grip the hard road beneath. The greater the speed of these machines the greater the risk of insufficient adhesion.

Designers of such vehicles should therefore aim at placing plenty of weight forward. A. J. WILSON.

The State of our Highways.

[5265.]—I understand that the flints shown in the accompanying photograph (taken on December 27th) were laid only a day or two before Christmas, and are on a good hard-surfaced road unlighted at night. My front tyre

Loose flints on the Andover-Salisbury road.

was gashed and burst in the M.C.C. Hounslow-Exeter trial, and the tyre is a total loss. Is there no redress? Is this road improvement or road obstruction in return for our 3d. per gallon petrol tax, plus 20s., plus 5s., plus 5s.?

H. W. TURNER.

[5266.]—I have seen in your sister paper *The Autocar* the complaint of several motorists *re* "stones on the highway," but although an old reader of your valued weekly, I have seen no similar complaints from motor cyclists, although it concerns us quite as much as it does car owners. I think we motor cyclists should bring a little pressure to bear on some responsible body to have this matter a little more ventilated, as we are paying for what we are not receiving, *i.e.*, improved roads. If you will bear with me I will give a few instances in the Bristol district. About a month ago Red Lion Hill, Knowle, was completely strewn, as a result of the frost, with small sharp flints, over which I had to ride. Sandy grit would have answered the purpose equally as well, but on the suburban roads around, these flints averaging the size of a thumb nail, are the rule. As I ruminated on this I wondered whether it was I or the horse owner that was paying the increased taxes, as there is never a bit of sand about when the roads are greasy for motors.

On the direct Portishead-Bristol Road on the night of November 30th, which was foggy and greasy, I ran over three large patches of newly-laid stone, which will be rolled in by the traffic, as in other years (I have never seen a steam roller on this road). The time was 5.30, and in the course of my journey I met many flocks of sheep and herds of cattle, and several unlighted vehicles.

To return to the roads in the Bristol district, and also Bath. The road from Bath to Coombe Down has a tramway running up it, which is formed with one cobble stone on the outside of the rail and one inside, and the rest is macadam, and there is a double track in places. The macadam has retired from the tram rails and cobble stones to a depth of two inches, and in some cases more, and between the rails about every hundred yards I have discovered a hole, which I should judge in the dark to be three or four inches deep. How reasonable people think traffic can use this with safety considering its greasy nature is a mystery to me, as is also the fact that as yet I have not heard of an accident. In the Kingswood district of Bristol for 150 yards at a time, the tramway is above the macadam from 1½in. to 3½in., but this is no worse than it has been the last four years during the winter, but unfortunately I have to use it night and morn. I am a commercial traveller who uses his motor cycle and pedal cycles to the extent of 12,000 miles per annum. What we motorists want is a law that shall compel the authorities to repair any road over ten feet wide one half at a time, and to place a blue light at each end of the patch all night. Roads ten feet and under to be completely rolled before being left for the night. All cattle drovers to be compelled to carry a green light, showing at front and back of the drove, as we all recognise the red light as a tail light, and the different colours would help us to distinguish what we were approaching. Every corporation or borough council allowing any tram company to have their tramlines more than threequarters of an inch above the macadam to be fined £10 for each offence, and also if they allow any tram company to leave less than seven feet absolutely clear of their nuisances, including vehicles; even if only for a minute, day or night, and it obstructs another vehicle, a like amount. This would call for a very small amount of the Road Board's funds, and could be carried out at once, so that we could all share a little of the benefits for which we are paying, and not likely to receive in any great measure for some years. L. B. JEFFERIS.

Frame Design and Cost of Running a Motor Cycle.

[5267.]—With reference to letter No. 5224 on the question of frame design, we notice that the writer refers to the unusually low saddle position obtained with the horizontal seat-pillar tube on the P. and M., and we should like to point out the reasons which enable us to obtain this extremely low position without the use of a dropped top tube. When the engine is set vertically in the frame the bottom of the crank case should clear the ground by six inches, there should be sufficient clearance between the top of the cylinder and the middle frame tube to enable the cylinder to be easily removed, and the space between the two frame tubes must be large enough to enable the front steering tube to be of reasonable length.

It is impossible to fulfil all these conditions and have the saddle well down in the angle formed by the frame and the back mudguard without the use of a dropped top tube. The method, however, of building the engine into the frame in an inclined position, as on the P. and M., permits of a ground clearance of eight inches underneath the crank case, and as the engine swings down there is no need to leave any clearance between the top of the cylinder and the frame tube.

We should also, if you can spare us the space, like to refer to Mr. G. Pirie's article on the cost of running a motor cycle. We have received dozens of letters from all over the country referring to the abnormal expenditure involved in Mr. Pirie's case, but it must not be forgotten that Mr. Pirie apparently ran his machine year in an year out, regardless of weather, and probably had very little opportunity for keeping it in tune. Any rider will admit that to cover 10,000 miles in a year with sidecar is working a machine unusually hard.

It must also not be forgotten that Mr. Pirie must have been extremely unfortunate with tyres for these to have cost him £10 during the distance, and that in the total expenditure is included an item of £8 for depreciation, £2 17s. 2d. for interest on capital, and £2 for a cycle shed, none of which items can be fairly included in running expenses.

PHELON AND MOORE, LTD.,
B. MARIANS, director.

[5268.]—I enclose herewith running costs of 2¾ h.p. Kerry. You might think it worth while to publish them for "Shy but Willing's" benefit:

RUNNING COSTS.

2¾ h.p. Kerry, accumulator and plain coil; distance run, 2,200 miles, during summer months.

Machine cost (lamp and tools included) ...	£8	10	0
Petrol (about eighty miles per gallon) ...	1	10	0
Oil		10	0
Licences	1	10	0
Engine repairs	1	15	0
Ignition repairs and accumulator charging	1	5	0
Tyres		5	0
Total	15	5	0
Machine was sold for	8	0	0
Total expenditure (or .8d. per mile) ...	£7	5	0

N.S.U.

[5269.]—Regarding letter No. 5255 in the last issue, will "CC 194" please give some detailed items of his expenditure of £31 9s. on tubes, tyres, repairs, etc., and of his expenditure of £8 13s. 6d. on sundries? His tyre expenditure is understood in view of the big mileage, but the expenses on sundries seem excessive for two years.

His yearly mileage works out at 17,000, and the cost of lubricating oil for this distance as £1 11s. 3d. Now if the cost of the oil is 4s. per gallon, he can only have used eight gallons, and if we allow 1,000 m.p.g. of oil (a very liberal estimate) the number of miles he ran with oil in his crank-case is 8,000; in other words he ran 9,000 miles without oil—truly a wonderful performance!

Will "CC 194" please explain this apparent incongruity?

A.K.

M.C.C. Twenty-four Hours' Winter Run.

[5270.]—I was surprised to see Messrs. Chater Lea's letter *re* leaving passenger at Salisbury. Who the culprits are I do not know, but I wish to say that I took my passenger right through to Exeter, as, of course, I can easily prove.

HUGH GIBSON.

[5271.]—In reply to the letter from Messrs. Chater-Lea Ltd., about the sidecars in London-Exeter Run. I checked the competitors between Chard and Crewkerne on return journey, and I only saw one sidecar without passenger; the seat was full of spares.

I have the opinion that motor cyclists play the game too well to adopt such methods to gain an award.

I directed them through Crewkerne on outward journey, and could distinctly see most of the passengers.

FRANK HANSFORD, A.C.U. AND M.U.

[5272.]—I have read with interest the various accounts of the above 24 hours' winter trial, but beyond Mr. Roy Walker's very favourable remarks as to hill-climbing capabilities of the Scott, I have seen no reference to Mr. J. E. Raine's performance. As one interested in the Scott I am curious to know the reason of Mr. Raine's failure to finish the journey. Perhaps someone can enlighten me.

INTERESTED.

3½ h.p. Single-cylinder Roadsters at Olympia.

[5273.]—Mr. R. W. Cook [letter No. 5242] makes the remark that at the recent Olympia Exhibition every spring fork shown was an eyesore, and says, moreover, that the modern spring fork only partially eliminates vibration. Now, while admitting that no spring fork will absolutely deaden all traces of vibration on rough roads at high speeds, I must strongly protest against the extravagant phrase that every spring fork shown was an eyesore.

In what way do the symmetrical lines of the Druid, Triumph, or Rudge-Whitworth forks offend the eye of Mr. Cook? The makers of the Druid fork specialise in the manufacture of motor cycle front springing devices, and have produced a fork which has given great satisfaction to all practical touring users, and I think it only fair to the makers, with whom I have no connection, to take exception to such a strange remark as "every spring fork shown at Olympia was an eyesore."

Mr. Cook also says that the diamond frame is dangerous to dismount from in a hurry. Now can he design a frame one can fall off quicker or with more comfort than from the scientifically correct diamond?

R. BAMFORD.

Rear Seat Attachment preferred to Sidecar.

[5274.]—No doubt some of your readers would like my experience with a lady on the carrier seat of a motor bicycle. You will see by the illustration the fittings are home made, and an air cushion is fitted, which absorbs vibration. I ride all weathers with my wife, who prefers this seat to her side carriage, and the additional weight certainly does seem to prevent side-slip. We covered seventy-nine miles on Monday, 26th December, and the roads from Manchester to Whaley Bridge were very dirty. From the Bridge to Buxton the roads were ideal, although the wind was very strong. I certainly prefer driving with my passenger on the carrier, and running expenses are less. If any of your readers would like details I will be pleased to forward same through *The Motor Cycle*.

Rear seat attachment referred to in letter No. 5274. The special home-rigged mudguards on this machine are not without interest to winter riders.

W. H. MORGAN.

Sportsman or Potterer?

[5275.]— The article by "Ixion" with this title in your issue of December 29th is of great interest to the bulk of your readers, who, as you know, are many of them most interested in the competition side of motor cycling.

"Ixion" has discovered that the motor cycle is not merely a toy for boys, but also that it is the most efficient, speedy, and cheap means of progression for the "potterer." If by the potterer, he means the man who has gone a little past propelling himself with his legs for long distances against head winds, up steep hills, and over heavy roads, I agree with him. There is hope yet for the ruling body that it, too, may appreciate this fact, and endeavour by its competitions so to favour the development of the motor bicycle that those persons who specially require aids to progression may be able to avail themselves of the speediest and cheapest individual method of progression in the world.

When the day comes (as it must do very speedily, probably within a year or two) when machines are built of moderate horse-power, which are safe on any roads, and keep the rider dry, clean, and warm, there is no doubt that "Ixion," too, will discard his 5 h.p. Gatling gun, which takes him along too fast for the law on the flat, and if the road be at all treacherous is apt to side-slip him into the ditch round the first bad bend on his daily hill.

I have read his article carefully, and I, personally, fail to see the sportsmanship in using a piece of machinery unsuited

for the work it has to do. It is not claimed by any sane engineer that 5 h.p. is required to carry a burden of 2½ to 3 cwt., and yet this is as far as the single-speed motor bicycle has got. I am quite aware that so-called 3½ h.p. machines do wonders, but not when developing 3½ h.p. Now, it is not denied that the modern single speed is a wonderful machine, but the limit of flexibility of the poppet valve air-cooled engine is about reached. To the outsider, it looks almost idle to expect the most unflexible power producer, namely, the petrol engine, to become more flexible. It may be urged that I am hopelessly prejudiced in favour of two-speeded lightweights, but this is not so. I, like "Ixion," want my machine as light as I can get it with safety, and if he can get 150 lbs. to carry himself and a 5 h.p. engine, I shall want much less to carry a 3 h.p.

Moreover, I want my machine to take me where the 150 lbs. 5 h.p. will never get. On a recent Monday I rode my two-speed (weight all on 133 lbs. and self over 15 stones) with no pedals up a hill of 1 in 8 (mainly mud and loose stones), over a mile and a quarter of gallops over the Downs, up a 2ft. grass bank and over another threequarters of a mile of Downs to a cottage, from door to door five and a half miles, in twenty-three minutes, with my legs tucked comfortably behind the leg-guards and a big leather-lined great coat down to my knees. On the same machine, without pedals, I rode to Bristol and back on Wednesday after 12 midday, a distance of 112 miles, starting off out of my village up the hill which Mr. Catt so graphically described as a "miniature Birdlip."

I have gone through the pleasures of motor cycling so touchingly alluded to by "Ixion." One winter's day in 1904 I retimed an engine in a snowstorm, two miles from anywhere, with the bits in my lap, sitting over the engine like a hen to keep the snow out what time I fiddled in the cylinder. These days are gone, happily, and now we are to be called "potterers" because we prefer comfort, cleanliness, efficiency, and safety, to riding machines whose noise and speed are to-day keeping thousands out of the ranks of motor cycling.

A last word about quadcars. During the time after the shows motor cycling is apt to be slack, and various subjects which at other times are crowded out come upon the *tapis*, Chief among them is the four-wheeled motor cycle. I cannot understand *The Motor Cycle* being at all in favour of a two-track four-wheeler. Van Hooydonk tried it, and if he could not make it a success, who can? No man has had a longer experience. We know what wonderful people the Americans are, and yet the Bigmobile *et sui generis* are not a bit like the enthusiastic pictures one sees of racing quadcars overtaking motor bicyclists.

No, no; the single tracker is the machine. As "Ixion" describes it, the "two-wheeled perpetual motion perambulator," and if we do not see it at the next show—"free engine, two-speed gear, one kick type of starting, antomatic carburation, automatic lubrication, ghastly cumbersome mudguarding, weather-proofed ignition, no nicks and corners for dust, no oilstains, fore and aft springing"—I for one shall be very much surprised.

CHARLES S. PATTERSON, M.B., M.R.C.S.

[We cannot agree with our correspondent's contention that we favour two-track four-wheelers except as light passenger vehicles. We publish any praiseworthy designs which we consider especially likely to interest motor cyclists, but, generally speaking, we regard vehicles of this type as altogether a different proposition to the motor bicycle.—ED.]

Cleaning and Overhauling a Motor Cycle.

[5276.]—I wonder how many of your readers smiled over the very excellent hints on cleaning and overhauling a motor cycle by Rex! Keen man, Rex! Also, obviously, a man of leisure. He cleans his machine after every ride. Really, it looks as if he spent the whole of his time off the machine in working on the machine; *i.e.*, he is not a married man. Of course, so much care is an excellent thing for the motor cycle, which ought to last its rider for at least ten years at a very small outlay of cash, but those who, like myself, are very much engaged in business, in the course of which they have to ride their machines every day under all circumstances of weather and over all kinds of roads, would very soon be knocked out of the running if they had to spend two or three hours every evening in cleaning. I live (perforce) five miles from my office, and my office hours are supposed to be from 9.30 a.m. till 6 p.m., and are, as a matter of fact, as much longer as may be necessary to finish work in hand I suppose, on the average, I get home each evening at 7.15 I am one of the noble army of Benedicts, and I am very fond of golf and all field sports. Do I clean my machine after every ride? What do you think? No, sir! I buy a new machine every second year, and can always be sure of getting best price for my old one because I put my faith in that oil which "Rex" so objects to. My engine comes down about once in a 1,000 miles to have the deposit removed and the valves attended to, and at such times the machine gets a good clean up, and is afterwards greased practically all over. Then it runs another 1,000 in all weathers before it is touched again, and thereafter cleans up very little short of "as new" owing to the grease despised by "Rex." SCENE SHIFTER.

Gear Variation by Slipping a Clutch.

[5277.]—I was much interested in the letter from Mr. Ernest Frasetti, *re* gear variation by slipping a clutch. Will this gentleman kindly say whether the free engine clutch as fitted to the Triumph could be used in the way he mentions, as, if so, the variable gear problem is about solved?

ARTHUR H. APPLETON.

The Motor Cycle Business in France.

[5278.]—In the interest of other motor cyclists intending to ride in France, I beg to contradict Mr. Schilling's letter [No. 5254] in your issue of January 5th.

Besides the metal band referred to, motor cycles must have number plates, as in England.

Full particulars are given in the Touring Club de France Year Book—France Nord—page 483, 1910 edition.

For two years I have ridden a Triumph and sidecar, and my number is "592 U 8."

A short time ago I was stopped in the Avenue du Bois de Boulogne because my number plate was not quite in the proper position.

I quite agree, however, that what is needed in France is a journal like *The Motor Cycle*.

Paris. H. E. SKEPPER.

SUMMARY OF CORRESPONDENCE.

"C.A.F.D." is desirous of obtaining the address of the owner of a 5 h.p. Vindec Special motor bicycle and sidecar which came into his possession in August last. The machine has the word "Bluebeard" painted on the tank.

REAR RED LIGHTS. "IXION'S" SUGGESTION.—The Glendower Motor Company write: "We have noticed 'Ixion's' suggestion to the cycle trade, and would like to point out that the Sparkbrook Mfg. Co. supply red reflex mirrors fitted free of charge to their Grand, Royal, and National models. These lights are fitted on to a very efficient luggage carrier. We ourselves have supplied these mirrors to purchasers of bicycles in the interests of both themselves and motorists.

Mr. W. Disney Cox, the manager of the Croydon depot of the Rover Co., Ltd., writes: "Referring to 'Ixion's' suggestion in your issue of the 29th ult., that the big cycle firms or their agents might present a red reflex mirror gratis to every cash purchaser of their more expensive models, I would like to draw your attention to the fact that the Rover Co., Ltd., are fitting a Lea Reflex light to their first grade models this year as part of the standard specification."

EXPERIENCES WANTED.

REPLIES TO THE QUERIES BELOW SHOULD BE ADDRESSED c/o THE EDITOR, AND WILL BE FORWARDED DIRECT TO THE QUERIST.

"W.C.R." The Albion, J.A.P., and Mabon free engine clutches.

"A.G.C." (Northleach). 2¾ h.p. Douglas, single speed, particularly with regard to reliability, belt troubles, engine wear, and hill-climbing on grease.

"H.H.C." (Derby). The 2¼ h.p. Royal Enfield lightweight, particularly with regard to hill-climbing, comfort, and general reliability. Also a satisfactory long-life belt.

We would again remind our readers that those who wish for readers' experiences of various machines or accessories should enclose a stamped and addressed envelope in which the replies may be sent.

New Regulations for the A.C.U. Quarterly Trials.

BELOW will be found a summary of the new regulations for the A.C.U. (London Centre) Quarterly Trials, which will be held on Saturday, 28th January, under the open competition rules of the Auto Cycle Union.

In cases where the old rules remain unaltered they are omitted, only such important items as entry fees being published in addition to new regulations.

ENTRIES.—Any number of machines of each make will be eligible for entry. Entries must be received by Saturday, 21st January, together with either of the following entry fees: Manufacturers or agents, one guinea; members of the A.C.U. or its affiliated clubs (private owners), half a guinea; non-members of the A.C.U. or its affiliated clubs, fifteen shillings. Late entries will be received up to the first post on Wednesday, January 25th, at double fees, and should be sent to the Secretary, 18, Down Street, Piccadilly, W.

THE START.—The competitors will be started at 9 a.m. from the Swan and Sugarloaf Hotel, South Croydon, and will be expected to accomplish the journey without any stop other than as officially recorded. One hour's rest will be allowed at the half-way point, Hastings, but no adjustments, etc., will be permitted.

THE COURSE.—The course will be one of about 128 miles in length, and will extend over a route from Croydon, through Purley, Warlingham, Westerham, Westerham Hill, Knockholt, Dunton Green, Sevenoaks, Tonbridge, Lamberhurst, Robertsbridge, St. John's Cross to Hastings, returning *viâ* Bexhill, Ninfield, Gardner's Cross, Horsebridge, East Hoathly, Uckfield, Hartfield, Edenbridge, Limpsfield, Chalk Pit Hill, Warlingham, Sanderstead, and South Croydon. A competitor may not leave the course under any circumstances whatever, and will be penalised or disqualified at the discretion of the judges if it is found he has done so.

HILL TEST.—Times will be taken up Westerham Hill and Chalk Pit Hill. Competitors will be marshalled at a point about two miles away, and re-started at regular intervals in the order of their arrival. Those failing to start when called upon may lose all marks for that particular hill. Passing will not be allowed between the re-start and the foot of the hill, neither will any stop be permitted at the foot of the hill. A minimum speed will be set, and every machine will be expected to climb the hill at the speed set for that particular class.

JOURNEY.—The maximum running time for the journey will be at the rate of eighteen miles per hour, and the minimum twenty miles per hour.

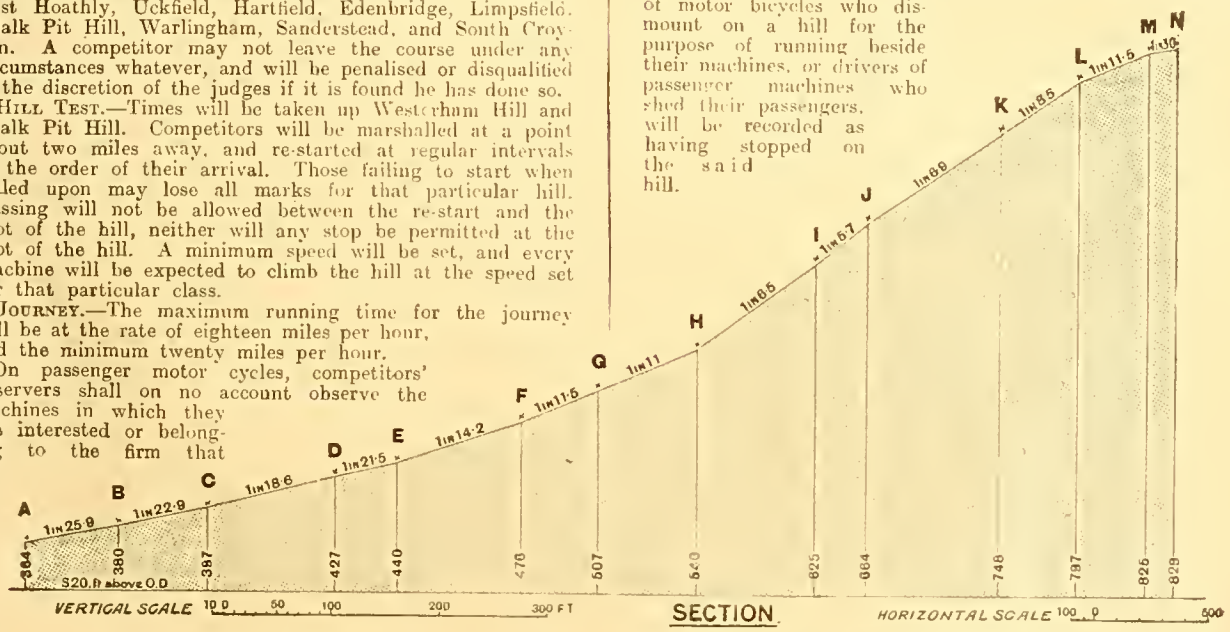
On passenger motor cycles, competitors' observers shall on no account observe the machines in which they are interested or belonging to the firm that nominated them. Every machine making a complete officially recorded run without an involuntary stop, and satisfies the judges as regards its fittings and equipment, shall receive a first-class certificate. Other machines will receive a certificate giving a record of their performance.

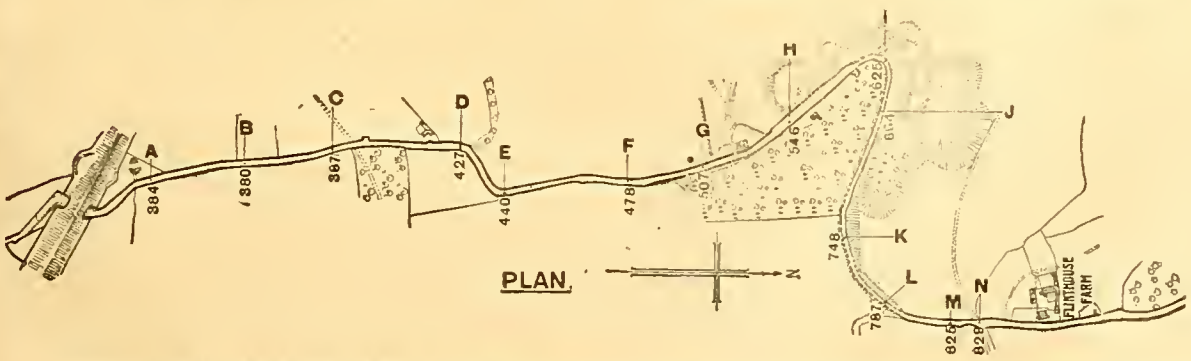
To qualify for a first-class certificate a machine must be equipped with: 1. Free engine or variable gear (not enforced in January trial). 2. Two brakes working independently. 3. Mudguards of ample dimensions. 4. Stand and luggage carrier. 5. Efficient silencer, which does not exhaust directly on to the road. 6. Magneto protected or placed in a sheltered position. 7. Tool bag of ample capacity. 8. Tyres of standard size. 9. Lamp complete. 10. Spring front forks. 11. Lubricating oil capacity for lightweights, 1 pint, others 1 quart. In addition the machine must be reasonably clean and the engine and crank case reasonably free from oil.

Enamel, finish, and weight will not be taken into account.

SPECIAL PRIZE.—At the end of the year a silver cup will be awarded to the driver of the machine which has ascended the timed hills closest to the set standard, subject to his having obtained four first-class certificates. The following will be the standards: For passenger machines, 15 m.p.h.: for machines not exceeding 300 c.c., 15 m.p.h.; for machines above 30 c.c., 20 m.p.h.

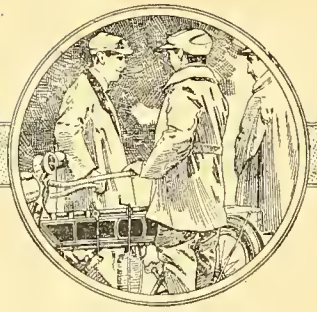
NOTES.—Sanitary stops may only be made near Lamberhurst, on the outward journey, and Ashdown Forest, on the return journey. The following is the definition of the term "non-stop": Riders of motor bicycles who dismount on a hill for the purpose of running beside their machines, or drivers of passenger machines who shed their passengers, will be recorded as having stopped on the said hill.





Contour Section and Plan of Chalk Pit Hill, between Limpsfield and Warlingham. This hill has been selected by the A.C.U. Committee as one of the test hills in the Quarterly Trials on the 28th inst.; if the weather conditions on that date are unfavourable, competitors will ascend Titsey Hill.

CURRENT CHAT



TIME TO LIGHT LAMPS

SPECIAL FEATURES

WINTER MUDGUARDING.
LAMP AND QUARTERLY TRIALS: NEW REGULATIONS.
FORCED INDUCTION.
THREE YEARS' IMPORTS & EXPORTS.

(Greenwich).

Jan. 12th	... ...	5.14 p.m.
,, 14th	... ...	5.17 ,,
,, 16th	... ...	5.20 ,,
,, 18th	... ...	5.23 ,,

British v. Dutch Motor Cyclists.

Unfortunately, the proposed match British v. Dutch motor cyclists is not to be—at any rate this year. A further letter received from the hon. sec. of the Dutch M.C.C. is published in this issue, giving the club's decision.

Interesting Selections by Amateurs.

Chas. E. Murphy is having a 3½ h.p. T.T. L.M.C. this year, whilst G. W. Hillyard, the well-known lawn tennis player, has selected a Zenith-Gradua. J. R. Haswell is changing from a roadster to a T.T. Triumph, and will ride in the Isle of Man Race.

Witham on the Warpath.

S. A. M. Witham informs us that he is willing to challenge Jake de Rosier, the American professional, who, as we have already mentioned, is coming to ride in the T.T. Race. Witham would ride his 5 h.p. T.T. Bat-Jap, 666 c.c. He also intends to try and lower the mile and kilometer records flying and standing starts on the same machine.

The Trial of Motor Cycle Lamps.

The general lines upon which the A.C.U. lamp trial will be run at Brooklands on February 9th are detailed in this issue, as also a summary of the new regulations for the Quarterly Trial on Saturday, the 28th inst. It will be remembered that a new course has been chosen for this trial, a map of which appeared in *The Motor Cycle* last week. This week we give a contour section and plan of the steepest gradient selected, Chalk Pit Hill.

The January Quarterly Trials

Owing to a printer's error in our description of the January Quarterly Trials course published last week, it was stated that the trials were to be held on the 21st. This is obviously incorrect, as for some weeks in the list of future events the 28th inst. is given as the date. It is on the 21st that the entries close at ordinary fees; entries will be accepted at double fees up to the 25th inst.

M.C.C. Winter Run.

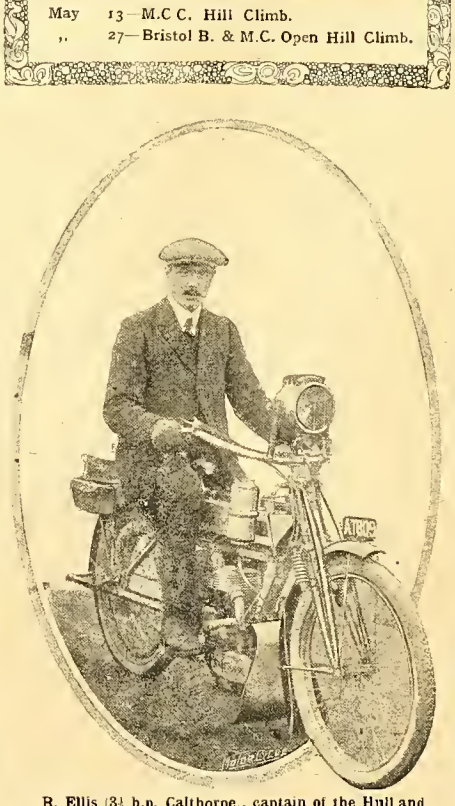
Last week a contributor mentioned that the front footrest of the Indian which was ridden by E. B. Dickson, and got damaged in a fall, formed one of the engine lugs. The Indian footrests are separately attached to the frame in front of the engine.

Enterprise.

Every M.U. and A.A. road patrol is equipped with a reflex rear light. Would that these useful fittings were everywhere compulsory.

FUTURE EVENTS.

Jan.	—Auto Cycle Union Annual Dinner.
,, 28	—A.C.U. Quarterly Trials (Metropolitan centre). Croydon to Hastings and back.
Feb. 6-11	—Auto Cycle Union Lamp Trial at Brooklands.
,, 8-11	—Motor Cycle Show at Leicester.
,, 16	—M.C.C. Smoking Concert.
Mar. 18	—M.C.C. Opening Run.
Apr. 8	—Oxford M.C.C. Open Hill Climb.
,, 14-17	—M.C.C. London - Land's End Trial and Easter Tour.
,, 22	—A.C.U. Quarterly Trial (Yorkshire centre).
May 13	—M.C.C. Hill Climb.
,, 27	—Bristol B. & M.C. Open Hill Climb.



R. Ellis (3½ h.p. Calthorpe), captain of the Hull and East Riding A.C.C., a successful competitor in the winter trial of the M.C.C., and winner of two cups and twelve medals in Northern competitions of 1910.

British Motor Cycles in the Antipodes.

The insidious hold that the American big brother car is getting in Australia is not being emulated by the Trans-Pacific motor cycle trade. Years ago (writes our Sydney correspondent) we were used to seeing an occasional Yankee two-wheeler, but—and the sales have increased out of number—such an event is now very rare.

A Better Test of Hill-climbing.

In connection with the new series of Quarterly Trials we are glad to announce that the A.C.U. has at last adopted our repeated recommendation to send all competitors up the test hills with "hot engines." In the past it has been the A.C.U. practice to stop the riders at the foot of the hill and despatch them again singly, but it is generally recognised that the true test of a machine's hill-climbing capabilities is whether it will climb a steep hill on the run and with a hot engine.

A New South African Club.

The Cape Peninsula Motor Cycle Club was recently formed, and starts with a membership of thirty-two. The hon. sec., Mr. T. Widdowson, of Cape Town, tells us in the course of an interesting letter that the roads in his district are much better than those in the Transvaal. The average 3½ h.p. machine is amply powerful enough for work at the Cape, notwithstanding some severe climbs. Triumph, P. and M., Humber, Rex, Zenith-Gradua, and F.N., he says, are the most popular makes in the Cape Peninsula, and quite a number of Scotts are on the way. Sidecars are becoming popular.

Bullet Rewards Motor Cycle Speed.

Policemen as a rule never have been noted for being on the job ahead of time when bad y wanted, but a Chicago bluecoat with his motor cycle upset this time honoured tradition the other day by responding to a burglar call so quickly that he was mistaken for the culprit by the nervous occupant of the house, who straightforward shot him first and investigated afterwards. When Arnold Miller, 3008, Lake Park Avenue, discovered burglars in his house he sent in a "C-Q-D" (the Marconi signal "I want assistance") to the nearest police station, and motor cycle officer W. Gaynor responded so quickly that he got a bullet for his celerity. Gaynor's wound was not serious, and Miller was acquitted of all blame

E. J. Skinner (3½ b.p. T.T. Kerry-Abin don) competing in the N.S.W. hill-climbing competition on Watson's Bay Hill, Sydney (described on page 15 of our last issue), won by A. Levi riding a K.A.

Imports and Exports of Motor Cycles.

Last year's imports of motor cycles reached a total of £99,248. British exports during the same period were valued at £161,130. For the tabulated returns see page 43.

Leading Motor Cycle Clubs.

We recently announced a series of articles under the above heading, and are glad to say that the hon. secretaries of the various clubs have taken up our suggestion with avidity. Next week we shall commence the series with the BIRMINGHAM MOTOR CYCLE CLUB.

Motor Cyclist in the Sea.

We read that W. C. P. Dew, auctioneer, has had a remarkable experience on Bangor Pier. He was riding a motor bicycle, and when approaching the pier head it is stated that he lost control of the machine through the brakes failing to act, and was pitched into the sea. Fortunately, there was high tide, and the fall was only about 12ft. Despite a severe cut in his leg Mr. Dew kept on swimming until picked up by the Corporation ferry steamer.

The Badge of the A.A. and M.U.

The new badge of the Automobile Association and Motor Union, which have now amalgamated, is depicted herewith. As will be seen, the design is a combination of the badges hitherto issued by the two societies, being in the shape of the old M.U. badge with the interlaced letters of the old A.A. badge. Individual members of the old M.U. will be entitled to exchange their M.U. badges for the new badge free of cost. After a date to be fixed by the committee, only the old A.A. badge and the new badge will be recognised by the patrols.

A Sign of the Times.

One of the leading newspapers in Ceylon has recently started a column of motor cycling notes. The writer who adopts the pseudonym of "The Spark" deals first with the cost of running a motor cycle.

Road Race in Nyasaland.

The annual competition for the Sharpe Challenge Trophy was run under the auspices of the Motor Union of Nyasaland on October 20th last, five riders starting. The winner was A. H. Sabbatini, who was the only competitor to make a non-stop run, but our correspondent unfortunately omits to mention the make of motor cycle he rode. The average speed of the winner was 25 m.p.h.

The Ubiquitous Motor Cycle Thief.

After a temporary lull for a few weeks we have another instance of the theft of a motor bicycle. The machine lost is the property of G. Peppercorn, 7, Devonshire Street, Islington, N. His mount was a 1909 Triumph, registered number LB 1653, engine number 6008, frame number 140054, 1909 pattern Bosch magneto, and A Won Clinchers. We give here a brief account, showing the manner in which the machine was stolen, which may serve as a warning. The thief called on the owner on Thursday, the 29th ult., inspected the machine, but did not decide to purchase it. The next day Mr. Peppercorn received a postcard asking him to bring the machine to 280, High Road, Wood Green, which was signed A. Porter. It appears that this individual had a letter sent to this address, which is a shop bearing the same name as himself, and called for it at eight o'clock. Mr. Peppercorn's appointment was for eight o'clock, but he did not arrive till an hour later, and was surprised to meet the individual about 200 yards from the shop. "Porter" suggested that they should return, and on arriving at the shop he asked Mr. Peppercorn to wait a minute outside, and entered the premises by a private door. In a few minutes he reappeared, and asked to be allowed to have a trial spin. The owner of the machine waited half an hour and then went into the shop, eventually discovering that the man was no relation to the person to whom the shop belonged. He has not since been seen.

W. W. Reynolds (1909 Triumph), who was beaten in the final round of the N.S.W. hill-climb. Time 60 secs. compared with the winner's 59½ secs.

Journalistic Methods in U.S.A.

Our original article and illustrations of motor cycles at the Paris Salon, which appeared in the issue of December 8th, has provided useful data for an article in *The Bicycling World* of New York. No acknowledgment is made to the source from which the information was obtained, yet the illustrations have been copied so faithfully that our artist's initials are plainly to be seen.

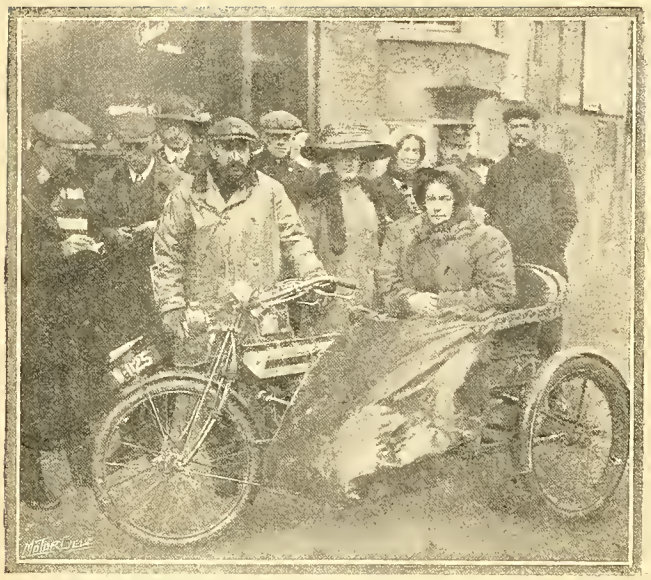
"Basic" Patent Covering Motor Cycles

A "basic" patent covering the construction of all motor cycles is modestly claimed by E. J. Pennington, and the announcement is made that he is bringing a claim against the Hendee Mfg. Co., of Springfield, Mass., for roughly £108,000. Pennington is not unknown to some of our readers. He was at one time located in Coventry, and connected with the Great Horseless Carriage Co. (now part of the Daimler Works).

(Photograph kindly sent by W. R. Glasson)

SCENE AT A HILL CLIMB IN NEW SOUTH WALES.

The competition was at the South Head of the entrance to Port Jackson. At the foot of the high cliff in the centre, the "Dunbar" was wrecked.



Mr. and Mrs. Stacey on their 3½h.p. single-geared Triumph and sidecar, winners of a silver medal in the Sheffield and Hallamshire M.C.C. winter trial. The weather encountered on this run was even worse than that experienced by the M.C.C. members. Observe the mascot over the number plate—a Sheffield blade.

THE YEAR'S RECORDS.

Since we examined the A.C.U. ledger for the purpose of tabulating the year's records, which were published in last week's issue, the following additions have been made:

Distance and Time.	Holder.	Date.
CLASS B.		
2 hours 78 mls. 132 yds.	F. W. Dayrell	Oct. 9, '09
CLASS C.		
150 miles 2h. 51m. 17⅗s.	F. A. McNab	June 22, '10
2 hours 108 mls. 1,367 yds.	G. Lee Evans	Nov. 13, '09
3 hours 158 mls. 548 yds.	F. A. McNab	June 22, '10
CLASS D.		
150 miles 2h. 37m. 40⅘s.	A. J. Moorhouse	June 22, '10
2 hours 123 mls. 50 yds.	J. T. Bashall	June 22, '10
3 hours 151 mls. 1,545 yds.	C. B. Franklin	June 22, '10
CLASS E.		
2 hours 118 mls. 719 yds.	H. V. Colver	Oct. 9, '09
3 hours 165 mls. 930 yds.	H. Martin	Nov. 22, '09

1910 BRITISH CLASS RECORDS.

CLASS D.—50 miles record, under the name of S. A. M. Witham, should be moved to the British record column, and should take the place of the entry under the name of H. V. Colver.

GEAR-DRIVEN MAGNETOS.

By some means, we referred to the N.S.U. in last week's issue as having a chain drive for the magneto. This is not so, gear drive is used for the magneto on all models of N.S.U. motor cycles.

CLUB NEWS.

Sutton Coldfield A.C.

On Saturday next, at 7.30 p.m., a paper will be read at headquarters, the Royal Hotel, by Mr. J. L. Norton, A.I.M.E.

The title of the lecture will be "Tuning up and the correction of faults on a motor cycle engine."

A discussion will follow in which all members are invited to take part.

Oxford M.C.C.

An open hill-climb will be held on Saturday, April 8th, full particulars of which will shortly be published. All enquiries respecting this event will be gladly answered by the trials hon. sec., Mr. H. G. Hill, 11, Market Place, Banbury.

Torbay and District M.C.C.

At a meeting held at the York Studio, Fleet Street, a new club for the above district was successfully formed, and officers elected for the ensuing year as follow: Messrs. H. Benny (Paignton), captain; Reg. Holloway (Torquay), vice-captain; A. Powell, hon. secretary; and W. Harding, hon. treasurer. Twenty members were enrolled. The members present represented Dartmouth, Paignton, Brixham, Teignmouth, Ivybridge, and Torquay. Another general meeting will be held the first Wednesday in February, at the York Studio, 37, Fleet Street, at 8 p.m. Motor cyclists residing in the district are cordially invited to attend.

North Middlesex M.C.C.

A meeting was held at the Swan and Pyramids Hotel, North Finchley, on Thursday, January 5th, at which this club was successfully inaugurated. Mr. W. H. Browne presided. Thirty-five members were enrolled, whilst numerous promises of membership were received, making the success of the venture beyond doubt. The Earl of Ronaldshay, M.P., wrote wishing the club every success, and consented to act as president. Dr. A. E. C. Dickenson, John Page, A. F. Petch, and Edward White, were elected vice-presidents, and the management committee are Miss Berend, Messrs. R. D. Bennett, W. S. Bennett, D. G. Blakey, W. H. Browne, J. M. Butterfield, A. V. Deacock, Gordon Fletcher, H. C. Mills, C. O. Sanger, and G. Sanger.

Pleasure was expressed that the club proposed getting up competitions on new and novel lines, and that the club would cater for, not only the trade rider, but also largely for the amateur rider, who had been at any rate somewhat neglected. A strong feature in the club is to be the promotion of motor cycling amongst ladies, either as sidecarists or owners. The subscription was fixed at 10s. 6d. per annum, lady members 5s., to include the provision of a button badge and affiliation with the A.C.U. No entrance fees will be charged. Mr. A. Victor Deacock will act as captain and trials hon. secretary. Mr. H. C. Mills deputy-captain, Mr. Chas. O. Sanger treasurer, and Mr. D. Grey Blakey hon. secretary.

S. Sawer, Sheffield's only representative in the M.C.C. 24 hours run to Exeter and back, riding a latest model 3½ h.p. Premier with auxiliary exhaust. He was ahead of time at all controls.

Club News.—

Northamptonshire M.C.C.

The above club is promoting the following events, and members are asked to keep open the undermentioned dates as well as to bring any interested friends they may know: Tuesday (January 17th), Mr. W. C. McMinnies will give an illustrated lantern lecture. January 26th (Thursday), annual dinner and presentation of prizes; the mayor (Mr. S. Yarde) will probably present the prizes; early application for tickets should be made to the secretary, Mr. C. T. Underwood, 236, Wellingborough Road, Northampton. March 2nd (Thursday), annual general meeting. Further particulars of the above will be posted to all members within a few days.

North-west London M.C.C.

The A.G.M. will be held at headquarters on the 18th inst. All members interested in the management of the club should make an effort to be present, and take the opportunity to put forward suggestions for 1911.

Arrangements are well forward for an international hill-climb with the Lyons M.C.C. The venue has not been finally decided upon, but Gaillon has been suggested.

On February 3rd Mr. Harold Karslake will read a paper before members, at headquarters, on "Competition Riding." There will be a discussion afterwards, and a very instructive evening should result in even better support of the club's competitions during 1911.

An open class for quadcars and runabouts will be included in the annual London-Coventry twelve hours' competition this year.

Essex M.C.

The fifth annual dinner and distribution of prizes will be held on Saturday, the 21st inst., at the Holborn Restaurant. Mr. Stenson Cooke will occupy the chair, and a good musical programme has been arranged. Ladies are heartily invited. The tickets are 5s. 6d. each.

Streatham and District M.C.C.

A well-attended "Breakdown Competition" was held at headquarters, the Crown and Sceptre Hotel, Streatham, on the 6th inst. The trial was held *in camera*, thus affording the first and last competitor an equal chance, and each individual test was limited to five minutes. The winner proved to be G. F. Hunter, whose time was 4 min. 20 sec. He found the trouble to be a broken h.t. wire. As he broke the insulating rubber it was necessary to make some other trouble. The magneto contact breaker was turned round apart from the armature, and R. G. Mundy succeeded in making the engine run in 4 min. 44 sec., but was unable to tell what the trouble had been. Mr. W. Pratt informed the assembled company afterwards that he had obtained from Mr. Bennett, of the Bosch Magneto Co., a punctured h.t. carbon brush holder. C. E. Davies removed same and replaced it, when the engine started, but as he was unable to account for his inability to start the engine in the first instance his performance did not count. Messrs. J. H. Jeffery (hon. secretary), R. G. Nye, and W. Pratt acted as judges. At the close of this interesting competition a hearty vote of thanks was accorded Mr. Nye for his kindness in placing a 1910 Clutch Triumph at the disposal of the members.

THREE YEARS' IMPORTS AND EXPORTS.

THE RAPIDLY GROWING TRADE IN MOTOR CYCLES.

THOUGH last month's imports of motor cycles and parts showed a temporary falling off, the year's total easily exceeds any previous Board of Trade returns for a period of twelve months. As for the British exports, they show no sign of slackening their rapid increase, and in two years the returns have almost trebled.

The Returns for December.

Dealing first with the closing month of the old year, the imports of foreign-built machines were represented by the following figures:

	Quantity. Month ended 31st December.			Value. Month ended 31st December.		
	1908.	1909.	1910.	1908.	1909.	1910.
Motor cycles ...	33	89	47	909	2,786	1,541
Parts thereof	—	—	—	3,788	2,444	3,148
				£4,697	£5,230	£4,689

British Exports.

Our exports during the same month are greatly in excess of the imports, as will be seen by the official returns below taken from Board of Trade returns:

	Quantity. Month ended 31st December.			Value. Month ended 31st December.		
	1908.	1909.	1910.	1908.	1909.	1910.
Motor cycles ...	88	317	455	3,513	11,424	13,792
Parts thereof	—	—	—	1,910	5,538	3,804
				£5,423	£16,962	£17,596

The Yearly Returns Compared.

Both imports and exports show a considerable advance in 1910. Although the number of foreign motor cycles imported shows a slight decrease, the value of parts has increased enormously. It will be seen that three and four motor cycles are imported every day of the year.

The Import Figures.

	Quantity. Year ended December 31st.			Value. Year ended December 31st.		
	1908.	1909.	1910.	1908.	1909.	1910.
Motor cycles	1,340	1,442	1,387	36,258	41,036	44,297
Parts thereof	—	—	—	29,182	29,416	54,951
				£65,440	£70,452	£99,248

British Exports Trebled.

It was during 1908-9 that British exports of motor cycles overtook and passed the value of our imports of the same species, and since then our exports have never looked back, but continue to increase at a rapid rate. On an average approximately nine motor cycles are exported daily. The figures below represent the exports of manufactures of the United Kingdom:

	Quantity. Year ended 31st December.			Value. Year ended 31st December.		
	1908.	1909.	1910.	1908.	1909.	1910.
Motor cycles	1,048	1,884	3,418	37,206	69,141	122,447
Parts thereof	—	—	—	20,148	36,294	38,683
				£57,354	£105,435	£161,130

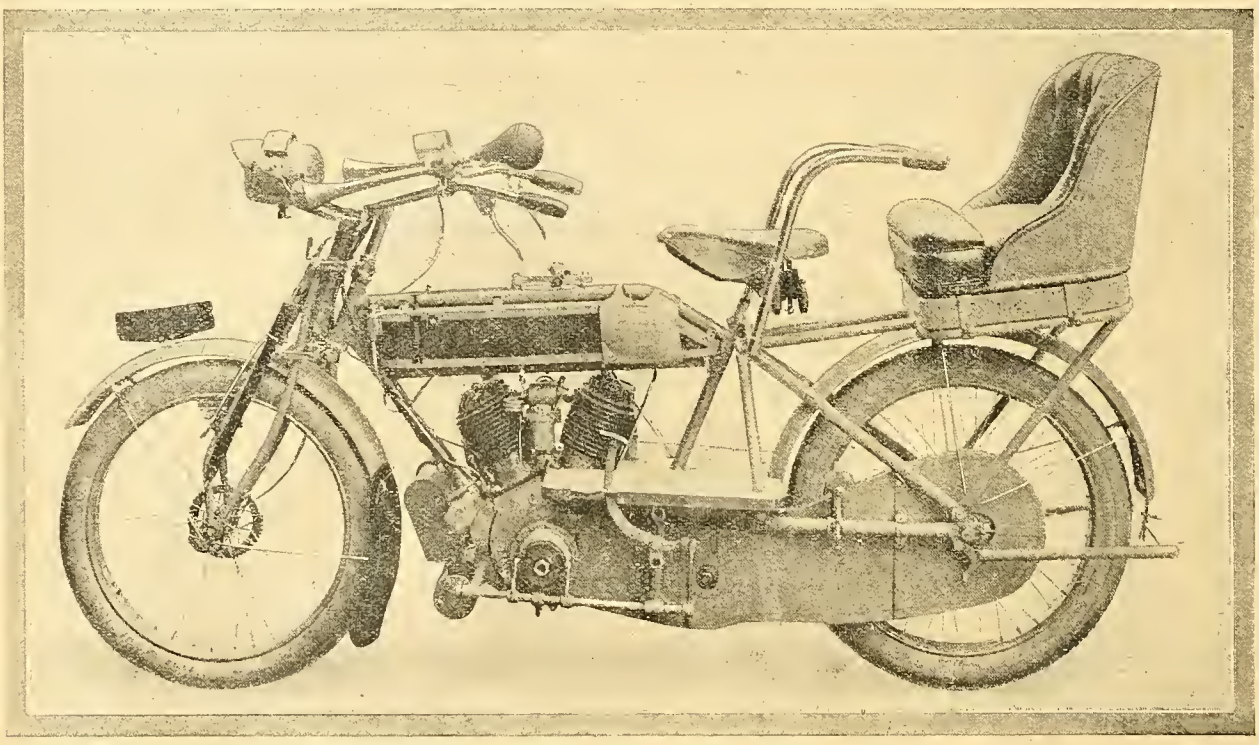
Re-exports.

In addition to the above returns, we have re-exported from this country foreign built motor cycles and parts as under:

	Quantity. Year ended 31st December.			Value. Year ended 31st December.		
	1908.	1909.	1910.	1908.	1909.	1910.
Motor cycles ...	62	92	91	1,970	3,166	3,220
Parts thereof	—	—	—	11,264	19,023	4,387
				£13,234	£22,189	£7,607

A POWERFUL MOUNT FOR AFRICAN ROADS.

THE imposing motor cycle illustrated below is a twin-cylinder Matchless built specially to the order of a South African rider, and was referred to by a reader in our correspondence columns recently. The motive power is an 8 h.p. J.A.P. engine, and the transmission is by ¾in. chain. A Chater-Lea plate clutch is carried on the engine-shaft, and a Chater-Lea two-speed gear box, with handle starting, on the bottom bracket. As will be seen, the chain is entirely enclosed, which is considered essential for use in S.A. The machine is fitted with every conceivable convenience. It will be noticed that an ordinary saddle is provided for the driver, and on an exceptionally strong rear carrier a coach-built seat is mounted, and between the seat and the carrier a flat spare petrol tank is fitted. The driver's feet rest on footboards (although a pair of footrests are fitted in front to enable a change of position), and those of the passenger behind on specially fitted footrests. 3in. Continental tyres should prove of ample strength and ensure immunity from punctures. The magneto is protected by a fibre case, and is handle-bar controlled. Thorn catchers are fitted to the front wheel, whilst in addition to an exhaust whistle a three-note horn is carried. A watch and speedometer on the handle-bar complete the equipment. The wheelbase is 4ft. 9in.



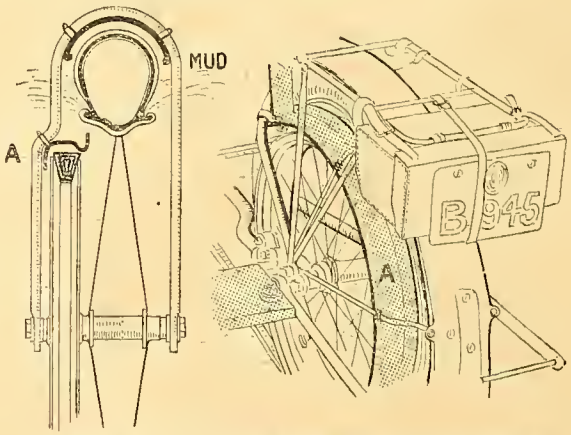
A luxurious 8 h.p. twin Matchless-Jap specially built to the order of a South African reader.

THE LONDON-EXETER-LONDON WINTER RUN.

The first time a 1911 pattern 7 h.p. twin Rex has been put to a severe test was in the London-Exeter winter run, and it emerged with flying colours in the hands of A. J. Sproston.

F. Smith was another who experienced hard luck in the trial. His twin Clyno, he writes, ran perfectly in every respect until within thirty miles of Hounslow. He then discovered that the cup of the back hub had unscrewed and let the balls out on to the road. Upon further examination he found that the adjusting cup and locking ring had been screwed with a right-hand thread instead of a left-hand, which was the cause of the trouble. Mr. Smith adds: "I am more than ever convinced that we are on the right track with our covered in chains and gears, the whole having proved a great success under severe road conditions."

H. Gibson used a specially large mudguard on his front wheel made of wood fibre, and was astonished at its effectiveness. It was designed by his passenger, G. Wray, as also the rear belt guard, which we illustrate. It proved useful in two ways, preventing mud and water reaching the belt, and also the latter from hurling mud on the rider's back.



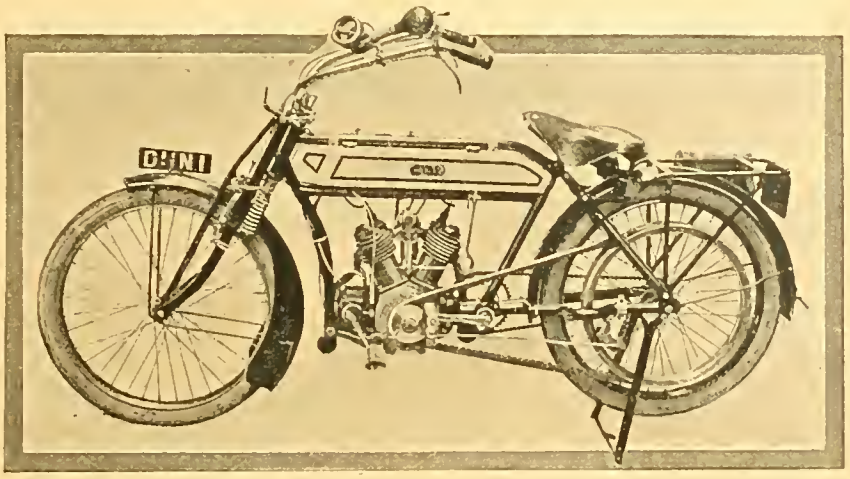
The special belt guard (A) used by H. Gibson, which proved most effective. Observe also platform for generator on sidecar axle.

New Twin-cylinder Hobart.

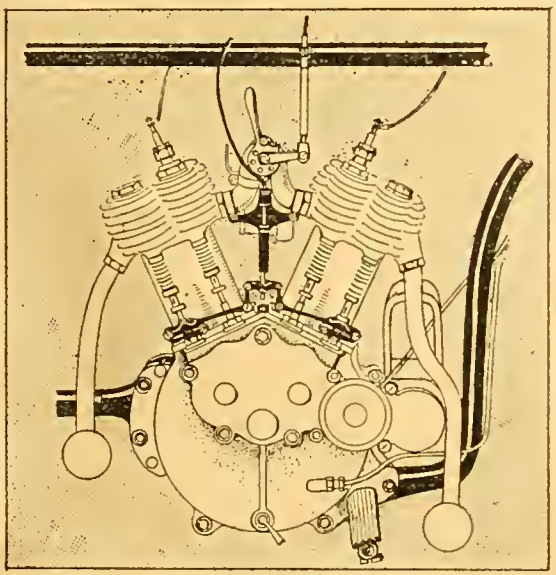
AT the time of the Olympia Show it may be remembered that a new pattern Hobart twin motor bicycle was announced, but unfortunately there were unavoidable delays in the production of the new model, and the machine could not be shown as was originally intended.

It is now ready, and we are able to reproduce a photograph of the first specimen, which, it will be seen, has a dropped frame enabling a very low riding position. The spring fork, tank, and other frame details are practically identical with the lightweight Handy Hobart which was so successful during last year.

The engine, which is of the twin-cylinder V-type, has a bore and stroke of 68 × 76 mm., and is rated at 3½ h.p. Single cam wheels are used to operate each pair of valves, so reducing the number of working parts, and rendering the engine particularly efficient. The magneto, which is neatly disposed in front of the crank case but behind the front tube, is gear driven. There are two separate exhaust pipes and silencers. The sparking plugs are situated over the inlet valves in the usual manner, while the carburetter is placed between the cylinders. Lubrication is by means of a constant feed pump fitted in front of the tank and in a sloping position. The rate of feed can be varied by means of a needle valve.

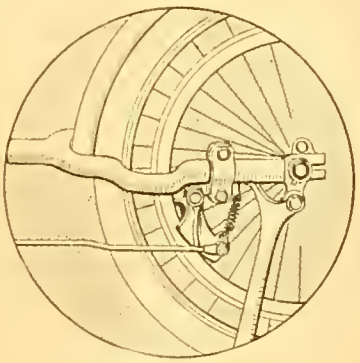


New model 3½ h.p. twin-cylinder Hobart.



The m.o.i.v. engine, showing particularly exhaust valve lifter mechanism. The extra air levers on the carburetter may also be observed.

The magneto contact breaker is controlled by a lever on the handle-bar, the other lever operating the throttle of the carburetter, which is described as of the semi-automatic type, although two extra air levers are provided on the carburetter itself—one to admit more air in warm weather and one to allow the engine to draw its pure air when descending long hills. In other respects the machine follows standard practice.



Details of foot applied belt rim brake and stand support.

The new twin Hobart is primarily intended for sidecar work, and is sent out equipped for the road with stand, carrier, footrests, toolbags fitted at side of carrier, and number plates, the rear plate being supplied with a red reflector light.

THE PROPHETS ON 1911.

"Old Moore" is sensational. In his almanac for 1911, and in the very first prediction, he says that a new invention will cheapen motor car travel. Also, that "tradesmen will have their hundred pound convertible." The last reference is rather mystical, but one is inclined to bet that the astrologer is rather late in the day as regards his invention. Motor cycle runabouts and quads are already out and about; so is the Auto-wheel. In March he is rather depressing. He foretells a glorious spring, and a bicycle invention which "will save much foot labour—adjustable pocket engine." Like a good seer he does not go into details. He leaves us to "imagination's airy wings," and waterproof shops (no weather prophecy ever came true). The ninth of May is, he says, an evil day for travellers. In June we are all to be seized with an inordinate desire for travel—because, forsooth, then Venus is in conjunction with Neptune.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Wet Weather Trouble.

I am troubled by wet weather. I have a magneto cover, and in addition this is well covered with American cloth, so that it is almost impossible for wet to get into it. I have also covered connections to plugs with rubber, but I always come to a stop in heavy rain, and the most mysterious part is that my carburetter seems to be sucked dry, as though supply pipe were stopped. This only happens in heavy rain. Can you tell me what may be the matter?—W.J.

The trouble seems to be undoubtedly due to the fact that you get water into the carburetter. The only cure we can suggest is to protect the carburetter in some way, so that the rain does not fall directly on it. There is also a possibility of the needle valve getting jammed by grit, thus preventing the petrol from flowing.

What Shall I Buy?

I ride a high-class motor cycle, 3½ h.p., which is a splendid machine, but when I come to a long, heavy bank cannot get to the top without heavy pedalling, and even then the engine will sometimes stop. I am 14st. in weight which may account for it. I have a variable pulley, which I always ride about as low as I can get it to save continually altering it, as I live in a very hilly part of Northumberland. Would a free engine be of any assistance? I am told it would, but have had no experience with one. It would add about 10 lbs., and my idea is that, as it adds weight, it would make it worse to get up a heavy bank than without it. Is a 1911 Triumph any improvement on the 1909 engine? Also, is a free engine a great advantage without a two-speed gear?—MOTOR CYCLIST.

You appear to be geared low enough, but the engine may be out of order and require a thorough overhaul. Yes, the 1911 engine referred to will climb hills that the 1909 pattern will not, and altogether it is a very much improved motor. The advantages of a free engine are that the machine can be started from a standstill without pedalling or running to mount. With or without a two-speed gear it is certainly an advantage.

A Stoppage in the Petrol Supply.

My 1909 3½ h.p. machine, while giving great satisfaction the past eighteen months, quite recently developed a peculiar jerkiness and lost the smooth running of former times. Latterly the following has developed: The machine, while running quite well for a hundred yards or so, suddenly slows up as if going to stop, and just as quickly gets away again. With the silencer open the explosions are quite distinct when running normally, but immediately the stopping sensation is felt the explosions are muffled and a peculiar burring noise is heard. While formerly I could run with air lever well open, now air and throttle must be on a line and knocking takes place on hills.—L.C.H.

It seems as if the carburetter passages and petrol feed pipe require a thorough cleaning, as we feel sure your trouble is merely due to a collection of foreign matter obstructing the flow of petrol. To reduce the tendency to knock, take down the engine and remove all carbon deposit. Also check over the strength of the valve springs to improve hill-climbing.

A. G. Butler (8 h.p. twin Minerva and sidecar), a medal winner in the Southampton M.C. Competition for the Oakley Challenge Cup.

Overheated Crank Case.

I have a 1910 twin-cylinder 6 h.p. two-speed gear and sidecar and mechanically operated inlet valves, and my trouble is that the crank case gets very hot so that I cannot bear my hand on it after a short run. I have had new piston rings fitted, but still it is the same. Do you think the fitting of a cooling fan would stop the trouble?—J.L.

You need not trouble about the crank case getting hot, unless the machine is evidently losing power from over-heating. If there are clear signs that there is loss of compression, and that the charge is getting past the rings, it is time for you to worry. You, however, say you have had a new piston and rings fitted, so we do not think there is any likelihood of this trouble having occurred. The crank case apparently is simply getting hot through conduction, consequently a fan would be of little assistance.

An Elusive Obstruction in Carburetter.

I recently bought a 5 h.p. twin second-hand, and it ran very well at first, but has now taken to slowing down and eventually stopping altogether. It will not go more than 200 yards. The compression seems to be good, as I can stand some time on the pedal with exhaust down. The magneto cannot be at fault, as it gives a good spark. I have cleaned the carburetter, and it seems to get a good supply of petrol. Being a novice, I am quite at a loss to know where to look for the source of this trouble.—J.G.H.

As soon as the machine shows signs of stopping have you tried closing the air? If the result brings about an immediate increase in speed you may be quite sure that there is something obstructing the flow of petrol to the carburetter. It is often possible to have the carburetter seemingly quite clear, and in some obscure corner there is an obstruction which, without warning, gets carried up near the top of the jet, and after the machine has been standing it flows back again whence it came. Water in the carburetter would also bring about a similar result. Try and get the inlet valve springs to have as nearly as possible the same tension and the same amount of opening.

Popping in the Carburetter.

My 1¼ h.p. motor cycle has developed a trouble for which I shall be glad if you can suggest a remedy. It loses power on hills, pops in the carburetter, and heats the engine. It does not answer to the throttle as it should, and is difficult to start. Compression is good, belt does not slip, ignition seems all right (magneto), and it is not for want of lubrication. Have ground valves and altered tension of automatic inlet valve spring. I have also altered the level of the float in the carburetter, and at present it seems to get the right amount of petrol. It cannot be weak mixture, as the same popping occurs when flooded. The machine runs worse with the throttle wide open (almost to the extent of stopping), goes along the [illegible], but fails to pull on hills. I have not taken the engine down, but the combustion chamber is clean and free from carbon deposit. It is the loss of power and popping that I cannot understand. If you can put me on the right track to rectify the trouble I shall be much obliged—E.H.

All the symptoms mentioned in your letter point to carburetter trouble, and we should be inclined to think that there is a stoppage in the flow to the carburetter, between the float chamber and the jet. If the stoppage is where we think it is flooding will make no difference. It is also just possible that one of the engine unions is not air-tight, and, consequently, the piston is drawing in air on each suction stroke and so upsetting the mixture. Test this by smearing oil or soapsuds on the joints and watch for tiny bubbles when standing on the pedal against compression. Another thing, late closing of the inlet valve owing to too large an opening or too weak a spring might cause popping.

Pitting of Magneto Contacts.

The platinum points on my 1908 Bosch magneto get pitted badly. The platinum comes off in lumps, and through having to file them flat each time, I have very little metal left. I have also stopped twice on the road in 900 miles, and found the platinum raised on the points on one side, or the other and touching the other point. After filing the raised portion off, the engine fires again. I have washed the contact breaker with petrol frequently. Can you please say what is the cause of this? Is the metal defective on the points? It starts quite easily and never misses.—W.W.

Platinum points should never be filed unless in an excessively bad condition, but should be tapped with a light hammer. This smooths them without wasting the platinum. The trouble is undoubtedly due to a bad condenser connection. If the magneto is one of the older type with flat spring holding on the contact breaker cover, the point of contact is the brass and steel between the spring and the end of the bracket to which it is attached, which should be scrupulously cleaned. If, after you have done this, the pitting trouble still continues, we should recommend you to have the magneto overhauled by the makers.

READERS' REPLIES.

Generator Troubles.

Re "G.A.P.'s" trouble with acetylene generator in your Queries columns, if he makes sure that the sleeve over water tube in carbide chamber properly covers slot in water tube, I am confident his trouble will cease.—L.W.C.

Poor Compression.

With regard to your reply in issue of December 15th, *re* poor compression in Douglas and slots getting all to one side. Messrs. Douglas Bros. kindly supplied me with a set of new rings, the compression is quite restored, and the machine is pulling well. The old rings do not seem worn comparing them with the new. I notice, however, that the old rings are much thinner on the side that the slot is made: I understand that rings should be somewhat thinner on that side, but the difference is much more marked on the old than on the new.—P. J' HAMILTON.

Motor Cycle Exhibits in Manchester.

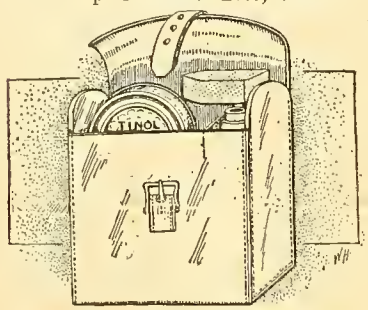
J. W. Gourlay, King's Parade, Fallowfield, Manchester, is exhibiting motor cycles at the Japanese Exhibition now open in Manchester. The exhibition will remain open until the 28th inst.

Extension of Scott Works.

The Scott Engineering Co., Morningtton Works, Bradford, are enlarging their premises and laying down special additional machinery to increase the out-put. At present they cannot take full advantage of the demand for their machines and have to refuse many orders. They inform us that only a few days ago they received an enquiry for 200 1912 models, which, of course, they could not entertain. They have, however, booked a few orders for 1912 patterns from private riders.

Useful Equipment.

A couple of useful accessories lately added to the Service Co.'s huge assortment are a double twist post horn and a Tinol soldering outfit put up in a neat leather case. The former gives off a deep resonant note, and is a



Tinol soldering outfit in neat leather case. (Service Co.)

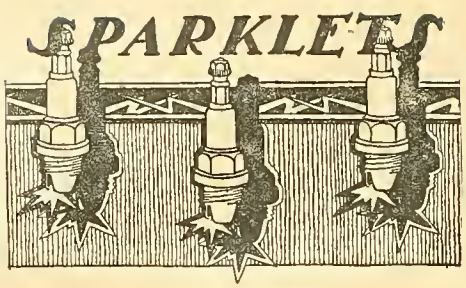
much superior article to the average motor cycle horn. The Tinol outfit needs no further description. Its handiness and convenience are already well-known, and having been compactly arranged in a small leather case for attachment to any convenient part should find a place on many readers' machines.

Our Bookshelf.

"Automobile Law, Simply Explained," is the title of a very useful sixpenny booklet issued by the publishers, Iliffe and Sons, Ltd., 20, Tudor Street, E.C. Its title is self-explanatory, as it sets forth the law in a plain straightforward and easily understood way so far as it affects motor vehicles of all types. There are also useful tables giving the taxation licences for various sizes of engines and a very compact index.

British Oils on the Continent.

Continental tourists often mention in articles and letters appearing in these pages that British oils are difficult to obtain abroad. They will be pleased to hear that Price's Huile de Luxe is now on sale in Switzerland, being stocked by J. Hussey and Co., 6, Rue Pierre Fatio, Geneva, who are the Swiss agents for Triumph motor cycles. Duties and freight make this oil more expensive than Continental oils; nevertheless, the above named firm have taken up the sale of it.



Autogenous Welding.

Weldings, Ltd., Lionel Street, Birmingham, have just issued a little booklet on motor repairs. The firm are autogenous welders, and from the illustrations in the booklet appear capable of repairing any portion of a broken engine, such as crank case, cylinder, or crankshaft.

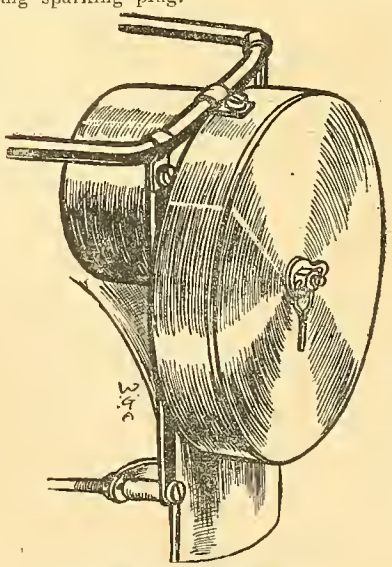
Agency Announcements.

Auto-Carriers, Ltd., West Norwood, S.E., inform us that the arrangements for an agency between themselves and F. B. Goodchild and Co., Ltd., for the sale of the A.C. pleasure vehicles, terminated on December 31st last, and all orders and enquiries should now be sent direct to Auto-Carriers, Ltd., as above. We also hear that Mr. G. N. Higgs will shortly establish an agency in the West End for A.C. tricars.

Godfrey and Applebee, Ltd., have opened new premises at 208, Great Portland Street, W., where they will hold agencies for several makes, and sell both new and second-hand machines.

Air-cooled Sparking Plugs.

Motor cyclists who take part in competition work, where the greatest efficiency is desired, will read with interest that many of the competitors in the Baron de Forest Cross-Channel flight used the new Lodge self-cooling sparking plug.



A USEFUL REFINEMENT.

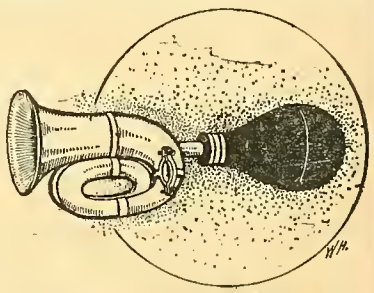
The Kerry Abingdon combined spare tube and belt case fitted to the rear of the carrier. The lid is screwed up with a neat thumb nut in the centre.

Catalogues Received.

A well illustrated catalogue of the B.S.A. motor bicycle is just to hand. The list contains excellent half-tone engravings of the complete bicycle and many of the distinctive features of a machine which is bound to make its mark in the motor cycling world. Hints on riding a B.S.A. motor bicycle form a feature of the booklet, which will be sent post free from the registered offices of the company, at Small Heath, Birmingham.

The 1911 catalogue of Castle and U.M.I. accessories is to hand. This contains several items of interest to motor cyclists, notably the Mea magneto, Castle accumulators, L.M. and Castle plugs, etc. The catalogue is well illustrated, and can be obtained from United Motor Industries, Ltd., at 45-46, Poland Street, W.

Bradburys have been very much to the front again of late, which renders their list of 1911 motor cycles of special interest. The catalogue is well illustrated, and contains, in addition to illustrations of the roadster and speed models, the Bradbury sidecar, which is



Service Co.'s post-horn for motor cycles.

made in a department at the works which has been running for some years manufacturing invalid carriages, children's mailcarts, etc. It will, therefore, be understood that in this class of work Bradburys are able to compete with any other firm in the manufacture of high-class sidecars. The combination has a two-speed gear on the engine-shaft operated by a handle on the top tube.

Echoes of the Winter Run.

In the M.C.C. winter run the three A.J.S. motor cycles which secured gold medals were fitted with Hutchinson tyres. This reminds us that we have just received the latest catalogue of these tyres from the Hutchinson Tyre Co., 70, Basinghall Street, E.C. In it will be found prices and particulars of inner tubes, repair outfits, repair bands, etc., while we must not forget to mention a rubber boot, specially made for motor cyclists, which should appeal to many riders.

Harry G. Bell, whose performance was mentioned last week, used 26 × 2½ wired-on Continental non-skids on his 5 h.p. F.N.

Lycett's Rawido Belt Co., Ltd., Birmingham, advise us that, among others, the following gold medal winners used Lyso rubber belts: Vivian Olsson (8 h.p. Oxted-Jap and sidecar), and Messrs. Patteson, Griffiths, and England (Moto-Rêves).

THE MOTOR CYCLE

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

The Trade and the Trials.

AT a meeting of members of the Cycle and Motor Cycle Manufacturers and Traders' Union, Ltd., held last week, several important resolutions were passed which cannot fail to have a very far-reaching effect on the events promoted by the Auto Cycle Union during the current year. The principal decision, in our opinion, is in connection with the Quarterly Trials. As far back as March, 1910, the Traders' Union passed a resolution recommending that Quarterly Trials should be confined to amateurs. This resolution was confirmed last week, and it was also decided that members of the Traders' Union do not support either directly or indirectly any Quarterly Trials during 1911. The Traders' Union view, as expressed by its secretary, Mr. A. Bednell, is that some years ago, when the motor cycle could not be relied upon to carry a rider 130 miles in a day without many mechanical troubles, the Quarterly Trials were of benefit to the pastime, but the latest types of machines have proved that much longer distances can be covered not only in one day, but for several consecutive days without inconvenience of any kind except tyre punctures. The members of the Traders' Union therefore think that the A.C.U. should formulate the rules for the Quarterlies in such a manner that private owners have a greater inducement to compete than heretofore, thereby converting these events into more sporting affairs. To explain further, the trade wishes to see these particular trials a test of skill between riders rather than a proof of the machines' reliability. We think it would have been better for all concerned if the Traders' Union had met a little earlier to confirm the March resolution, and issued its decision regarding the 1911 Quarterly Trials last year.

The A.C.U. is counting on the usual trade support on the 28th, and has formulated fresh rules, found a new course and steeper hills. This month's trial, therefore, bids fair to be a more severe test than previous ones, particularly if the weather conditions are unfavourable. The trade would have been right in saying the Quarterly Trials serve no good purpose, if it had added the words "in the summer." The A.C.U. and other organisations are then busy with other events, the roads are good, and the days long. Under the latter conditions the trial is perhaps too light a task of reliability. In the winter the conditions are different; 130 miles in the day may then become quite an arduous test, and interest is revived at a time when matters are inclined to be a little dull. Also one must not lose sight of the fact that the Quarterly Trials are to be held in the North, South, and Midlands this year, which should be a very much greater incentive to private owners to support them.

Another important resolution passed at the same meeting was that members of the Traders' Union do not compete in the Senior T.T. if single and twin-cylinder engines are allowed to compete in the same race. The A.C.U. has three courses open—to fall in with the trade view and ban the twins, to hold the race without the trade support (almost an impossible task), or to divide the senior event into two classes (singles and twins) as in the T.T. Race of 1908.

Doubtless the Traders' Union has good grounds for deciding to withhold its support if singles and twins are to race against one another, and we hope that by the exercise of some diplomacy a compromise may be formulated which will not entail the absence of many influential firms from an annual sporting event which has been of the greatest good to the pastime.

16,000 Miles with a 3½ h.p. Sidecar.

I NOTICE that readers frequently ask the question whether a 3½ h.p. single-cylinder bicycle with a fixed gear will take a sidecar and two persons over give-and-take country, both for touring with the necessary amount of luggage and also for local work.

In April, 1908, I found myself the proud owner of a new single-geared Triumph and a Mills-Fulford castor-wheel sidecar. The former I selected on its proved reliability and the fact that, studying the advertisement columns of *The Motor Cycle*, it seemed to fetch an unusually high price second-hand. The latter on account of the castor wheel, as I knew by experience the necessity of truing up the fixed wheel of a rigid sidecar accurately with the bicycle and the very great difficulty in doing so, and I did not care for the flexible, or what I call the "wobbly" type.

The first important consideration with this combination is to keep the engine tuned up always to give its maximum available power. Used as a solo mount, it has a very large reserve of power that is seldom called upon, so that it will carry a single passenger and average well over the legal limit with valves, etc., in such a condition that it would not look at a sidecar and thirty stones, including luggage, to say nothing of hills and wind with one gear only available.

Remember you want the total horse-power most of the time and are running with your throttle much wider open. In practice I have found it necessary to grind in valves, remove carbon deposit from piston and cylinder head, and generally tune up at least every 1,000 miles, and sometimes even more often.

I met a man last year in Warwickshire with a 1907 3½ h.p. machine who had never ground in his exhaust valve in two years—a thing impossible with a sidecar.

Wind Resistance and Hills with a Fixed Gear

I am often asked, What pace can you average and what hills can you get up? My reply to this is that it depends more on the wind and the roads, most particularly the former, than on anything else, provided always that the engine is properly tuned up. In this connection nobody who has not tried it would believe the enormous difference the wind makes to pace and hill-climbing. I put the lowest average speed over, say, a hundred miles against a head wind with passenger and luggage at 14 to 15 m.p.h., and the highest with wind on dry roads at, I must say it, "well up to the legal limit," and the average at from 18 to 20 m.p.h. actual running time. A really steep hill on which one has to drop one's passenger naturally pulls this down, but if you study your Contour Book most of these can be avoided.

Now with regard to hills, I classify them under four heads—those I can get up with a passenger without pedalling, those with pedalling, those I can get up light with luggage, and those I cannot get up at all without both passenger and myself pushing. The last are not desirable, and I am glad to say are not met with often except in the wilds of Wales and such places. A good example of the first is Hindhead from London to Portsmouth, and all hills having gradients of not more than 1 in 20. The second class is represented by the Hog's Back from Guildford, the hill between Moreton-in-the-Marsh and Stow-on-the-Wold, Long Compton Hill between Shipston-on-Stour and Woodstock, the hill from Bettws-y-Coed to Capel Curig and the like, having gradients of not more than 1 in 12 to 15. In the third class come Broadway Hill between Evesham and Chipping Norton, Sunrising, and Bury Hill near Arundel, and those with gradients from 1 to 9 to 1 to 10. In the last class Birdlip is a sufficient example. In the first three classes of course short but much steeper pitches, that can be rushed, are to be surmounted more easily according to their length.

With regard to hills generally when touring, nearly all those on which a passenger has to be dropped can be avoided if one studies the road contour book properly (a book which is indispensable to the sidecarist), and that without going very far out of the way in point of mileage. It is surprising how very little alternative routes to a place, say 100 miles away, differ in distance. Suppose the sidecarist with a 3½ h.p. engine wants to go from London to Birmingham; avoid Dashwood either by route Reading, Oxford, Banbury, Warwick, or travel *viâ* Aylesbury, Buckingham, and Stony Stratford. Again, Worcester to London, avoid Broadway by Cheltenham route with the gentle rise over the Cotswolds at Andovers-

The writer, Mr. E. S. New, and his wife.

16,000 Miles with a 3½ h.p. Sidecar.—

ford with the grand road through Witney to Oxford.

In addition to the necessity of having the engine tuned up to give its full power comes the all-important consideration of driving in such a way as to get the best possible results. Except on general lines no one can teach this, it can only be acquired by practice with each individual make of bicycle and also each individual machine of that make. When I first started, in spite of a fairly good knowledge of driving different makes both of bicycles and cars, I could not get up many hills which after a few months I was able to surmount with ease. When you consider that the whole matter resolves itself into the question of the movement of the air and gas levers relatively to one another correctly for each particular hill in a very limited time, and within perhaps an eighth of an inch, this can easily be understood, particularly as the slightest mistake cannot often be rectified before failure and perhaps an abrupt stop.

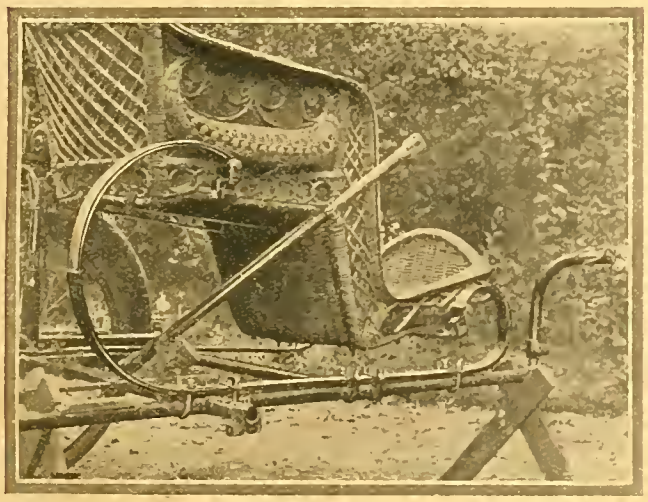


Fig. 2. The sidecar fittings.

No More Pushing to Start.

For the first twelve months I used a fixed engine pulley and no clutch; after that I fitted a Mabon free engine pulley and multiple disc clutch to the engine-shaft. This I found at once was an inestimable advantage in two very important respects, namely, doing away entirely with pushing the machine to start. (This exercise, unless on a distinctly down gradient, is, I maintain, a physical strain which is decidedly bad for anyone, however athletic.) All that is necessary is to put the machine up on the stand, start the engine with the pedals, throw out the clutch, push the machine off the stand, mount the saddle, and *gradually* let the clutch in, and do not forget the gradually, for even this, simple as it sounds, needs practice with thirty stones on board. It also has a second almost as great advantage, and that is in going round sharp corners and in traffic one is able to slow gradually down and stop if necessary without stopping the engine and pushing off again.

One of my chief objects in fitting the clutch was to use it in place of a second gear by letting it partially slip and so get up hills hitherto quite impossible.

In this at first I was much disappointed, but once again I found that practice affected the question even more than before; the whole thing is a question of touch and the necessary pressure of the hand against the strong spring of the clutch. It must be remembered that while you are learning this you have at the same time to be giving the same attention referred to above to the control levers, and also, perhaps, in the case of a bad hill pedalling hard all the while. Therefore, the novice must not be disheartened because his machine will not take him up hills that the man after long practice is able to conquer with apparent ease.

Free Engine Clutch a Necessity.

I found after a month or two that it is quite possible to drive up a hill a long distance by slipping the clutch after the point at which it would have been necessary without the clutch to drop my passenger, this distance practically only being determined by the considerations I had for overheating the engine.

For these reasons I would say that with a single-geared machine a free engine clutch is almost a necessity. At the same time, one of its greatest advantages is undoubtedly lost almost entirely if the clutch is foot and not hand controlled, for two reasons, the first being that difficult as it is to train your hand to feel the right amount of slip necessary, it is impossible to get such a sensitive touch, if any, through your boot, if indeed with the foot at all. The second reason is that at the time you want to take advantage of the help of slipping the clutch you also want the help of pedalling, and unfortunately you have not more than one pair of feet. I admit that this criticism of the pedal controlled free engine bicycle only applies to sidecar work, as the reserve of power in the solo bicycle makes pedalling on hills practically unnecessary.

I maintain without hesitation that this combination is the most difficult one to drive well and to get good results from, and for that reason I consider it the most interesting and sporting.

Some Details of Wear, Tear, and Cost.

Having now given a general idea of its possibilities and limitations, I should like to give a few details of the machine's wear and tear, cost, etc.

Of the Triumph bicycle I cannot possibly speak too highly. I often felt sorry for the poor little machine struggling along in all weathers, several times in snow, besides mud and slush, cheerfully doing all the time more than double the work for which it was designed.

The type of ignition plug fitted at the time I bought the machine used to fail and blow through every five hundred or a thousand miles, but after fitting a Bosch plug I never knew I had such a thing as a plug in the engine. It is in now and has run about eight thousand miles.

The exhaust valve stems used to lose their heads every two to three thousand miles, but this only entailed a few moments' stop to put in a spare, which seemed to run quite well enough to get to one's destination without bothering to grind in on the road, and in the 1910 machine which I have now they are much stronger. Excepting rare cases of grit or water in the carburetter, this covers all engine trouble on the road.

16,000 Miles with a 3½ h.p. Sidecar.—

In 1909 I had the new piston with dome top and higher compression fitted, and this undoubtedly gave much more power. My wife and I often used to remark when we had troubles with punctures or other things, thank goodness whatever happens the engine always runs cheerfully.

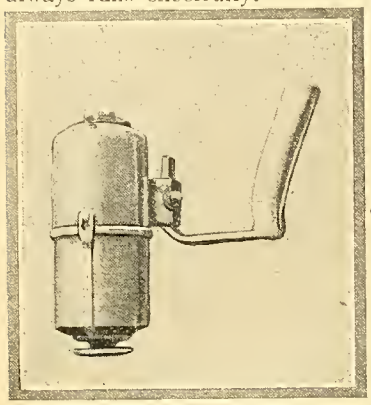


Fig. 3. The special generator bracket.

With regard to the machine, it must be stated that there is unquestionably more vibration and strain on the whole thing with a sidecar than without, though I do not find there is more vibration to the rider — rather the reverse. There is no doubt the weight of the sidecar and extra passenger holds the bicycle down when a bump is met, and so the shock to the rider is minimised.

Where Vibration Tells.

The weak spots are the front wheel spindle cones, which had to be renewed about every three or four thousand miles, more often in winter than in summer owing to liquid mud getting in in spite of filling the hub with grease. The spindle in the 1910 and 1911 models, however, has been greatly improved in this respect.

The fork crown spindle, when going round a corner too fast, is liable to break. I had four go, but I am told this is a private trouble of my own, and it is peculiar to sidecar work owing to the side strain, and the machine not being able to lean over as it is intended to do. A strap round the forks will always enable you to get home if you have no spare.

The large spring of the spring fork occasionally broke on bad roads, but the machine can always be ridden till a new one can be obtained, unless it breaks as thoroughly as one of mine did once. I was riding over the Cray Mountain in Wales, between Brecon and Swansea, when I suddenly came round a corner on to a chasm where the road should have been. It had been completely washed away the day before by a water spout, and I was on the rocks before I could stop. The spring broke into about a dozen pieces and flew in all directions, but luckily I had a spare.

With regard to spokes, those in the back wheel must be heavier than is necessary for the bicycle by itself, or one or two will have to be put in every thousand miles. All makers are now fitting them much thicker.

It is advisable to have steel liners in the tubes of the bicycle to which the sidecar clips are clamped. This, I believe, is usually done now. I had one back fork break in the total distance, fortunately in Coventry, and without suffering any damage; in fact I ran into the works with it broken.

The Type of Sidecar.

I now get to the sidecar itself. I have tried various types, but in my opinion the castor wheel type has more advantages than any other. Over the flexible it has the advantage that it can be driven light or loaded at any speed down to a crawl and will always stand up. Over the rigid with fixed wheel it has the great advantage that you have not got to bother about lining up the wheel with the bicycle, and there is no side drag on the tyre; I shall have something to say about this under tyres. The steering is perfectly easy and safe round corners, while on a straight road you can take your hands off the handle-bars when going at a fair speed. I have never known anything approaching a side-slip, either loaded or light, even on the limestone grease in Derbyshire or South Wales, and a bad tramline has no effect upon it at all, or the bicycle. Owing to its construction there is an enormous bending strain on the tube running parallel with the wheel to the head, and I had some trouble with this at first. In this connection I must pay a very deserved tribute to the makers, Messrs. Mills-Fulford, who replaced without question, free of charge, the first frames which developed this weakness, in spite of the fact that I had given them hard use over many thousand miles. This trouble has now been entirely got over by putting a liner inside the tube its full length. I am now informed that a new improved type has been put on the market, and I hope shortly to try it. I found no inconvenience at all in driving on the side of a badly cambered road with this rigid type. The attachment of such a sidecar to a motor bicycle is the only absolute preventive of side-slips under all road conditions which I know of, and as I have got to the age when a spill ceases to be an amusement I always keep mine on whether I have a passenger or not.

Details of Equipment.

Vibration to the passenger in a sidecar on bad roads is a serious matter, and I have not yet seen any in which the discomfort is properly guarded against; the cee spring and spring wheel only partly do this. The worst vibration does not come from the sidecar wheel itself so much as from the bumps which the bicycle encounters. I believe this will be almost entirely overcome by hanging the sidecar body on double D shackles from the cee springs fore and aft, allowing it to swing longitudinally—a system which the makers of my sidecar have adopted.

Beginning with tyres, I selected the Palmer Cord

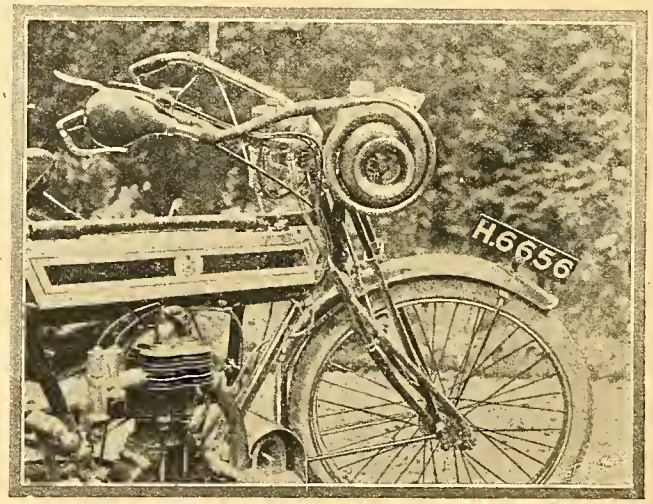


Fig. 4. Something like a horn!

16,000 Miles with a 3½ h.p. Sidecar.—

2¼in. all round, and in this connection novices should remember that these are made in two types—those which fit the 2in. rims, such as are fitted to the Triumph machine, and those made for 2¼in. rims—and it is important when ordering a sidecar to specify 2in. rim to take 2¼in. tyre, so that they can all be interchangeable, and one spare cover only need be carried when touring. I found these tyres wonderfully uniform in wear. On the back or driving wheel of the bicycle I got 2,000 miles, and after retreading a further 2,000, and on the front wheel exactly double the distance, in each case making the expense of upkeep, not counting the original covers supplied with the machine, four new covers and six retreads in 16,000 miles. On the sidecar I ran one cover over 15,000 miles, having it retreaded after 8,000 miles, and then only abandoned it owing to a bad cut. This astonishing result I attribute entirely to the castor wheel, and, of course, the quality of the tyre. The same inner tubes were used throughout, with one spare carried. The total cost of tyre maintenance worked out at almost exactly one farthing per mile.

It is impossible to run several thousand miles without having to mend a number of punctures. One of the first lessons to be learnt is to repair them yourself; the average local man, I am sorry to say, is worse than useless—you always have to repair the place again soon after. I have tried a number of different patches, etc., but I find that Michelin red patches put on with Michelin rubber solution by far the best. I must have put on nearly fifty, and I never had a single one move. The patch can be put on in five minutes, and I have mended some 4in. bursts in a worn out tyre quite soundly and permanently on the road.

Belts.

These varied very much indeed, very different results being obtained with the same make—I am speaking of the rubber and canvas variety. The average mileage I find to be nearly 2,000 miles, some lasting a much shorter distance, particularly in winter on flinty roads, while others in summer ran nearly 3,000 miles; these were ⅞in. belts. The leading makers I found fairly reasonable in their allowances for poor belts, but there is very big room for improvement and reasonable uniformity in belts of this type.

With regard to leather belts, although I know a number of men who still swear by them, my experience has been entirely the reverse. The type of stone the roads are made of in the district in which most of one's mileage is done must affect the question, but there is no doubt they are almost useless on flinty or sandy roads. I purchased one of the best known varieties and dressed it with the maker's own dressing, with the result that until the dressing wore off it slipped worse than a rubber one in snow, and when the dressing had worn off the driving surfaces in a very few miles were so embedded with small pieces of flint and stone as to make a perfect emery belt, and I had to have new flanges on my engine pulley within 200 miles of fitting it.

Fasteners.

There is still room for improvement in these. I prefer the hook type; it very seldom breaks, and generally wears as long as a belt does. I believe that any fastener which pulls through a rubber belt is entirely the fault of the man who fits it, except with belts in the last stages of decay.

Lamps and Lamp Brackets.

I only propose to deal with these as they apply to the sidecar itself. The vibration on the sidecar frame is much greater than on the bicycle head, and all the lamps I have seen made for the purpose shake to pieces or break their brackets and shake off. This is attributable to weak brackets, and I must have bought and discarded nearly a dozen, until I finally made an immensely strong double lamp bracket to take the lamp and separate generator (*vide* fig. 3). My advice is, always carry two good lamps—it is not always necessary to light both, but even the best and most expensive generators may let you down, and then you have a spare.

Luggage.

Many sidecars are fitted with a platform on the frame under the seat on which to carry luggage, so that the whole of the vibration of the frame affects the luggage, and things, however well packed, get badly damaged on a long run. My plan is to strap a suit

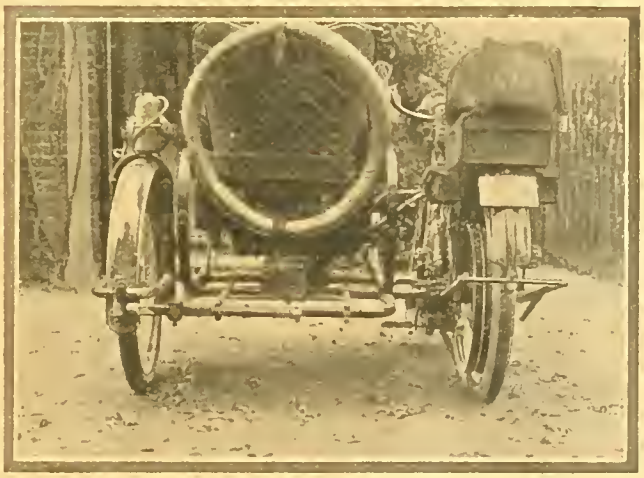


Fig. 5. Rear view showing ease with which a spare cover may be carried.

case specially made to fit tightly to the underside of the seat so that the luggage gets the benefit of the cee springs. An extra bag can be carried across the front of the foot of the car, leaving room for passenger's feet below it, and a third if necessary on tool and spares box on the carrier. In long tours a spare cover fastens nicely outside the back of the sidecar seat as illustrated above.

Spares and Tools.

I am one of those who believe in carrying plenty of spares—one inner tube, one or two exhaust valves, ditto sparking plugs, front fork spring, spare spindles for all three wheels, and fork crown head spindle, magneto chain, an assortment of bolts, nuts, balls, and sundries, and a few small magneto parts, besides the ordinary roll of tools supplied, a decent hammer, file, hand vice, centre punch, and a good screwdriver. In this connection, has anyone ever succeeded in extracting a belt fastener screw with the screwdriver supplied in the average tool roll? I think not. I never met anyone who did not discard

16,000 Miles with a 3½ h.p. Sidecar.—

it at once and buy a decent tool to carry instead. The reply may be that the former is flat to pack, but so is a bit of copper wire, and this is the more useful on the whole.

Clothes.

After trying all imaginable sorts of devices on the machine to keep the mud off and found them all a failure on a long run in rain and dirty roads, good overalls provide the only solution of this difficulty. I have found that the Burberry type is the best and cheapest in the long run. Rubber mackintosh stuff has a very short life, splits and tears, is not waterproof after six months, and is most unhealthy, as any pedalling or other work causes perspiration to collect on the inside and the moisture cannot escape.

In winter you cannot wrap up too warmly. The thickest, closest, all-wool homespun suit, with a warm long Shetland wool waistcoat with sleeves, and a thick lined Burberry overcoat and trousers, are none too warm on a winter night. For the feet, felt and rubber snow boots over thick boots, and for the hands rabbit-skin mits over loose washleather gloves, and, what is perhaps most essential of all in really cold weather, a Jaeger wool helmet tucked inside the coat collar, covering the ears. (The overall trousers should not have legs only, but should come up well above the waist.)

In summer any ordinary walking clothes are enough. For my passenger I had a special apron made, the foot of which comes well over the front to keep the wind from the feet. The upper part, which in fine weather is folded inside, can in rain be brought right up over the shoulders, with a place cut out for the neck, and fastened down all round outside the chair, thus making it perfectly rainproof. This was made to my design by Messrs. Mills and Fulford, and I believe they will now supply them to order.

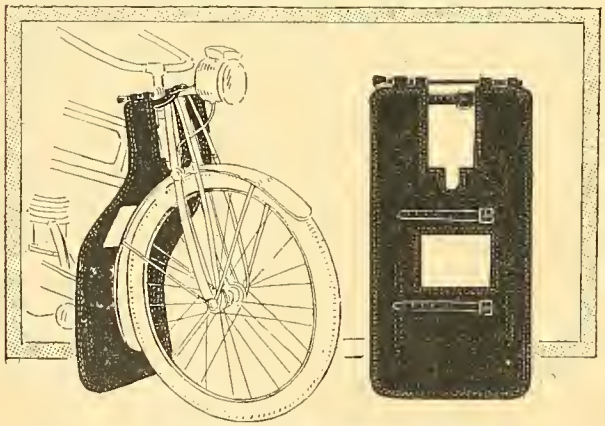
Costs.

A careful estimate for the 16,000 miles works out as nearly as possible at 1½d. per mile, which includes depreciation (I have just sold the bicycle for £35), licences, full value insurance with unlimited third party risk—without which no one should run a motor of any sort—tyres, petrol, oil, spare parts, and replacements and annual overhaul.

In conclusion, it will be seen that a sidecar combination has very wide possibilities indeed and few limitations, and is, I am quite convinced, the cheapest vehicle to take two passengers. With a good three-speed gear—if there is one, which I doubt—or, better still, with a variable gear such as I am now trying, and about which I may write later, the engine power is, I believe, ample, and personally I do not believe that the results to be obtained in slightly increased speed by the use of high powered twin engines are at all worth the extra worry and work and weight entailed, to say nothing of the expense of running. The gear I used throughout could not be reduced below 6 to 1, and was generally about 5 to 5½ to 1.

A USEFUL MUDSHIELD.

We have had a mud-shield sent to us for trial, which has been provisionally protected by Dr. J. Henry Stormont, Tanworth-in-Arden, near Birmingham. Dr. Stormont writes to say that he has been very much interested in our remarks on mudguarding and the results of the M.C.C. Winter Run, and as a result, combined with the experience gained in the use of a



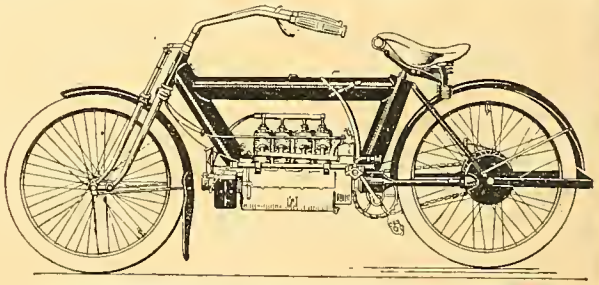
Dr. J. H. Stormont's readily detachable mud-shield.

motor cycle in an extensive country practice for about five years, he has evolved the shield which we illustrate.

This shield fits all machines of the standard type with magneto in front of crank case. The top strap fastens over the lamp bracket or spring fork buttress, the middle strap is passed round the front down tube below the tank, and the bottom strap is attached to the magneto stay rod or other convenient point. To keep it stiff across the top, a metal bar is pushed through loops, which prevents the shield being curled or blown backwards in a high wind or when travelling fast. The square opening is, of course, to allow a cold current of air to impinge on the cylinder. From our own experience, gained with a somewhat similar device, there is nothing more effective than a wide shield of this kind. It prevents clogging, and keeps the rider's legs, as also the engine and magneto clean.

FOUR-CYLINDER PIERCE.

The 6-7 h.p. Pierce four-cylinder motor bicycle—an American production—is to be sold in this country, Mr. L. F. Jones, Wold Newton, Hunmanby, Yorks, having taken up the sale of these machines. The machine has shaft drive, large diameter frame tubes



Pierce four-cylinder two-speed shaft-driven machine, for which English agents have been appointed.

used as tanks, magneto ignition, spring forks, handle-bar control, forced feed lubrication, a clutch, and two-speed gear. Another model is a single-cylinder 5 h.p. belt-driven machine with free engine. We understand the machines are moderately priced.

Occasional Comment

Under-geared Pulleys and Diameter of Belt Rims.

Now that under-geared engine pulleys are increasing in number, the question of the best diameter for belt rims has been raised. Obviously the larger the diameter of the belt rim and engine pulley the greater will be the amount of contact area between belt and pulley surfaces, and hence there is much to be said in favour of retaining the largest belt rim available. On the other hand, certain compensating advantages may be gained by reducing the diameter of the belt rim, as the belt is lifted higher out of the mud, and can be kept drier.

While it is true that most of the mud splashes are thrown out wide of the rear wheel, and at an angle of not more than 45 degrees with the ground, photographs show that a wheel throws up a little fringe of curved splashes which return on to the belt rim and foul the belt.

If the diameter of the belt rim is reduced the belt is removed out of the range of these splashes, and the efficiency effect is the same as if the larger rim had been retained. Therefore little choice exists between the diverse practices; if anything, the small rim is perhaps preferable.

Transmission for the Colonies.

Mr. Bramble's contention that the comprehensive term "colonial" covers a wide range of varying conditions is, of course, amply true. If the demand were sufficiently large an up-to-date maker would construct and list special Canadian, Australian, Indian, and South African models, instead of, as at present, timidly offering a single "colonial" model, which cannot exhaust any individual rider's requirements. Fortunately, the common denominator of "colonial" designs vastly exceeds the varying factors, and until the number of colonial buyers has been multiplied by 10,000 a single "colonial" model is all that the British industry can be expected to provide, nor can such models prove for the moment tremendously remunerative.

My real point is that a little more consultation between the British trade and the more experienced colonial riders would vastly improve the existing "colonial" models, admitting that these machines are necessarily of a makeshift order.

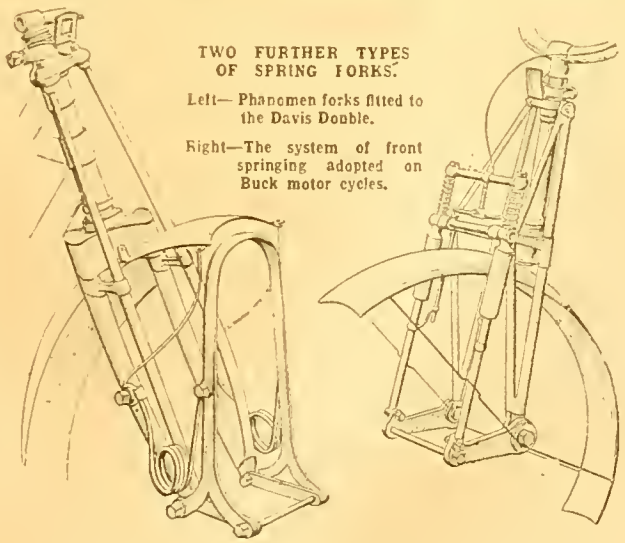
At present British makers are exporting machines to every colony which are often disqualified by some detail of specification from giving perfect satisfaction. In other trades industrial societies and agents are ready to supply expert information. For instance, if I wish to embark my son in the fruit-growing industry in any British colony I can immediately acquire the most exactly detailed information about his prospects and outfit. But if a novice desires to take out a motor bicycle to some remote corner of the empire it is distinctly difficult for him to discover which machine is best suited to the conditions under which he will ride it; nor is the manufacturer invariably in a position to help him.

It would assist manufacturers if the trade societies were to collect a little information of a simple character, *e.g.*, that no motor cycle is serviceable in Greenland, that rubber belts are "off" in Timbuctoo, that a four-inch ground clearance spells disaster in Saskatchewan, etc.

Infinite Gear Variations by the Clutch.

I perused Mr. Frasetti's letter [5251] with keen interest. I dissected the new Indian clutch at Olympia, and shall be astonished if a road trial confirms quite all the claims Mr. Frasetti makes for it. On both cars and motor cycles I have often experimented with splendid multiple disc clutches, affording an even larger proportion of contact area to both weight and horse power than the Indian device, and not one of them could claim the potentiality of an infinitely variable gear beyond certain very restricted limits.

Engineers do not regard this ideal as being at present within the scope of practical mechanics. I do not suppose that the Hendee Company themselves endorse Mr. Frasetti's contention, for side by side with the clutch they exhibited a specially powerful engine *provided with a two-speed gear*. If Mr. Frasetti can climb a *long* hill by slipping his clutch after the engine has baulked with the clutch locked he can do more with his sidecar than any of us have yet accomplished with a solo free engine bicycle; and our Olympia encomiums on the excellent Indian clutch were insultingly moderate.



TWO FURTHER TYPES OF SPRING FORKS.

Left—Phanomen forks fitted to the Davis Double.

Right—The system of front springing adopted on Buck motor cycles.

AMERICAN RECORDS IN 1910.

Below we publish a list of American records, amateur and professional, which have been broken during 1910. We have not given the complete list of records accepted in the States, partly because no agreement has yet been made between the Auto Cycle Union and Federation of American Motor Cyclists with regard to the recognition of records in general. We may add that if all American claims are accepted, records standing to the credit of British motor cyclists—excluding H. A. Collier's 24 hours' ride—number but four. Wake up England!

AMATEUR RECORDS.

Distance.	Holder.	Machine.	Date.	Time.
				m. s.
1 mile	M. J. Graves	Merkel	Dec. 9	42 2/5
2 miles	M. J. Graves	Merkel	Dec. 9	1 25
3 miles	M. J. Graves	Merkel	Dec. 9	2 8
4 miles	M. J. Graves	Merkel	Dec. 9	2 51 1/5
5 miles	M. J. Graves	Merkel	Dec. 9	3 35 2/5
6 miles	M. J. Graves	Merkel	Dec. 9	4 19 4/5
7 miles	M. J. Graves	Merkel	Dec. 9	5 3 2/5
8 miles	M. J. Graves	Merkel	Dec. 9	5 47 3/5
9 miles	M. J. Graves	Merkel	Dec. 9	6 30 3/5
10 miles	M. J. Graves	Merkel	Dec. 9	7 14
11 miles	M. J. Graves	Merkel	Dec. 9	7 59 1/5
12 miles	M. J. Graves	Merkel	Dec. 9	8 43 4/5
13 miles	M. J. Graves	Merkel	Dec. 9	9 27 2/5
14 miles	M. J. Graves	Merkel	Dec. 9	10 11
15 miles	M. J. Graves	Merkel	Dec. 9	10 56 1/5
16 miles	M. J. Graves	Merkel	Dec. 9	11 41 1/5
17 miles	M. J. Graves	Merkel	Dec. 9	12 25 1/5
18 miles	M. J. Graves	Merkel	Dec. 9	13 9 4/5
19 miles	M. J. Graves	Merkel	Dec. 9	13 54 2/5
20 miles	M. J. Graves	Merkel	Dec. 9	14 38 3/5

PROFESSIONAL RECORDS.

1 mile	Jacob DeRosier	Indian	Oct. 29	41 1/5
2 miles	Jacob DeRosier	Indian	Oct. 29	1 26
3 miles	Jacob DeRosier	Indian	Oct. 29	2 9 2/5
4 miles	Jacob DeRosier	Indian	Oct. 29	2 53 3/5
5 miles	Jacob DeRosier	Indian	Oct. 29	3 37 4/5
6 miles	Jacob DeRosier	Indian	Oct. 29	4 22 2/5
7 miles	Jacob DeRosier	Indian	Oct. 29	5 6 4/5
8 miles	Jacob DeRosier	Indian	Oct. 29	5 51 3/5
9 miles	Jacob DeRosier	Indian	Oct. 29	6 36 1/5

PROFESSIONAL RECORDS (*Continued*).

Distance.	Holder.	Machine.	Date.	Time.
				h. m. s.
10 miles	Jacob DeRosier	Indian	Oct. 29	7 20 2/5
11 miles	Jacob DeRosier	Indian	Oct. 29	8 5
12 miles	Jacob DeRosier	Indian	Oct. 29	8 53
13 miles	Jacob DeRosier	Indian	Oct. 29	9 35 1/5
14 miles	Jacob DeRosier	Indian	Oct. 29	10 20 1/5
15 miles	Jacob DeRosier	Indian	Oct. 29	11 5 2/5
16 miles	Jacob DeRosier	Indian	Oct. 29	11 50 2/5
17 miles	F. E. Whittler	Merkel	Dec. 9	12 34 2/5
18 miles	F. E. Whittler	Merkel	Dec. 9	13 17
19 miles	F. E. Whittler	Merkel	Dec. 9	14 1 2/5
20 miles	F. E. Whittler	Merkel	Dec. 9	14 45 1/5
21 miles	F. E. Whittler	Merkel	Dec. 9	15 29 1/5
22 miles	F. E. Whittler	Merkel	Dec. 9	16 13 2/5
23 miles	F. E. Whittler	Merkel	Dec. 9	16 57 2/5
24 miles	F. E. Whittler	Merkel	Dec. 9	17 42
25 miles	F. E. Whittler	Merkel	Dec. 9	18 26 2/5
30 miles	F. E. Whittler	Merkel	Dec. 9	22 6 4/5
35 miles	F. E. Whittler	Merkel	Dec. 9	25 51
40 miles	Jacob DeRosier	Indian	Oct. 29	29 49 3/5
45 miles	Jacob DeRosier	Indian	Oct. 29	33 33 4/5
50 miles	Jacob DeRosier	Indian	Oct. 29	37 16 1/5
55 miles	Jacob DeRosier	Indian	Oct. 29	41 0 1/5
60 miles	Jacob DeRosier	Indian	Oct. 29	44 45 4/5
65 miles	Jacob DeRosier	Indian	Oct. 29	48 36 2/5
70 miles	Jacob DeRosier	Indian	Oct. 29	52 22 1/5
75 miles	Jacob DeRosier	Indian	Oct. 29	56 13
80 miles	Jacob DeRosier	Indian	Oct. 29	1 0 3 3/5
85 miles	Jacob DeRosier	Indian	Oct. 29	1 3 55
90 miles	Jacob DeRosier	Indian	Oct. 29	1 7 44 1/5
95 miles	Jacob DeRosier	Indian	Oct. 29	1 11 33 4/5
100 miles	Jacob DeRosier	Indian	Oct. 29	1 15 24 2/5
Time.				Mls. Yds.
1 hour	Jacob DeRosier	Indian	Oct. 29	79 1,540

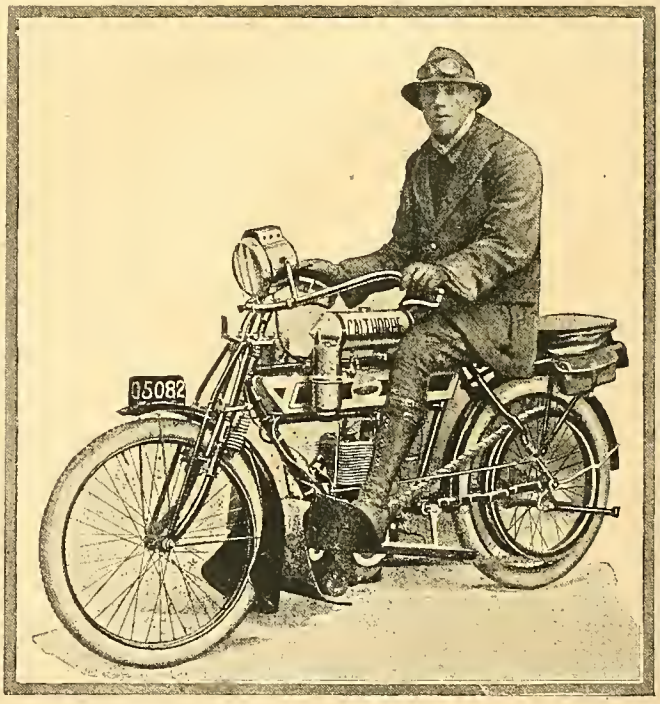
UPSET BY A DOG.

IN the Rochdale County Court on the 6th inst., J. Kelch, of Rochdale, sued P. G. Wilmot, of that town, for £9 6s. Mr. J. W. Calvert represented the plaintiff; and Mr. J. Bright Clegg appeared for the defendant.

The plaintiff's case was to the effect that on the morning of Friday, September 30th, he was riding a motor cycle along Bury Road at the rate of about ten miles an hour, and that when near defendant's house a dog rushed into the road and seized him by the left leg. The dog became entangled in the rear wheel of the motor cycle, and plaintiff fell to the ground. Plaintiff said the damages he suffered as a result of the defendant's dog rushing at him amounted to £18 4s., but he only claimed £9 6s. because some of the new things he had had to obtain were of benefit to him. He had had to incur expenditure in medical attendance, in having his motor cycle repaired, in obtaining new clothes, in having an upper set of teeth, and he had also lost some employment. Witnesses were called on behalf of the plaintiff to show that the dog had previously acted in a manner likely to inconvenience, if not actually endanger, passers by.

The defence was that the dog, which was a Scotch terrier, was of a quiet disposition.

In giving judgment for the amount claimed Judge Bradbury said there was no substantial defence to the claim. It was a most dangerous thing for dogs to rush after vehicles. People should not keep dogs which were a danger to passers-by. What was the good of them? The damages claimed were by no means commensurate with the loss sustained by the plaintiff, and defendant was lucky to get off at this price. If more had been claimed he should have probably allowed a larger sum.



J. W. Woodhouse, who, riding a 3½ h.p. Calthorpe, was successful in gaining a gold medal in the M.C.C. London-Exeter and back run.

LEADING MOTOR CYCLE CLUBS

Jas. R. Bedford, founder of the club and first hon. secretary.

R. Vernon C. Brook, the present hon. sec.

HISTORY OF THE BIRMINGHAM M.C.C.

FORMED in March, 1903, the Birmingham Club claims the distinction of being one of the earliest motor cycle clubs in the kingdom. On March 26th, 1903, Mr. J. R. Bedford called a meeting of all the motor cyclists in the city and surroundings for the purpose of starting a club having for its object "the development and encouragement of motor cycling, supplying to its members a social club, and a centre of information and advice on matters pertaining to motor cycles." Some twenty responded, and the club was successfully launched, its headquarters being the Colonnade Hotel in New Street.

Among the list of vice-presidents it is interesting to note such names as the following: The late Marquis of Anglesey, the late Hon. C. S. Rolls, Mr. S. F. Edge, Mr. Charles Jarrott, and Mr. Charles Sangster.

Realising that it would be dangerous to attempt too much in the first year of their existence, the club officials confined themselves to a series of Saturday afternoon runs to places strictly in the near neighbourhood, and to the holding of two competitions, the first of which was in the form of a hill climb on Rose Hill, Rednal. The second competition took the form of a 100 miles non-stop run, and it is interesting to note that at this early stage in its existence the club was faced with, and settled favourably, the difficult question of Sunday competitions, as many of the members were unable to spare the time required by competitions on any other day

Approached by the A.C.C.

In September, 1903, the club was approached by the Auto Cycle Club, now the Auto Cycle Union, with regard to some suggestions it wished to place before the Local Government Board regarding motors in general, and added several suggestions, which were embodied in the report laid before the L.G.B.

R. W. Duke, captain.

In November of the same year a meeting of automobile clubs was held in London to consider the advisability of forming a federation of provincial automobile clubs. This meeting was attended by delegates from the leading clubs in England, and is of particular interest to all motorists as being the first that was held in which motorists united in order to act together in the general interest of motoring.

Towards the end of the club's first year its first captain, Mr. H. P. Barker, resigned, much to the sorrow of the members, and Mr. J. Humphreys was elected captain in his stead.

Shortly after Mr. Humphreys's election it was decided to reduce the subscription and entry fee to the club to 10s. 6d. and 5s. respectively to obtain a larger membership. The end of the first year saw the club, which started with a membership of fifteen, rise to a total of forty members, and with a balance in hand of £11.

In the spring of 1904 the Birmingham Club wrote to the A.C.C. on the subject of affiliation, and made suggestions thereon, but affiliation did not take place until March, 1905.

Prosecuted for holding a Hill-climb.

In July, 1904, the club was prosecuted for holding a motor cycle competition on the highway, and it is amusing to note that the competition took the form of a hill climb up Hagley Hill, on the Kidderminster-Birmingham Road, a hill which the motor cyclist of to-day would hardly notice. Among other competitions held in that year were a lady passenger trial and a 100 miles non-stop trial, in which the following machines took part: 3 h.p. Smith's o' Saltley (winner); 2½ h.p. Alldays (second); 2¾ h.p. Maxfield-Aster (third); and 2¾ h.p. Werner. The 50 miles lady passenger trial was won on a 3½ h.p. Alldays tricar. All these machines, which one hardly hears of to-day (except Alldays), were among the best of their type at that time.

In 1906 the Birmingham Club entered, along with two other clubs, the Coventry Motor Cycle Club and the Motor Cycling Club, for *The Motor Cycle* Challenge Cup. The M.C.C. were the winners. The fact that last year no fewer than eighteen clubs took part in the competition shows how vastly more popular the pastime has become in the short space of four years.

In May, 1907, the club decided to form a library of touring maps, and at the same time a sort of Advisory Board to deal with touring and technical matters for the general information of members. The scheme is still in operation, but unfortunately is not taken advantage of as much as the committee would like.

In June, 1907, Mr. H. R. Fowler, a member of the club, won the twin class in the T.T. race, and to celebrate the event a supper was held in his honour. It may be noted, in passing, that last year no fewer than six members of the club entered for the T.T. race.

In 1907 Mr. J. R. Bedford, the founder and hon. secretary, before leaving Birmingham and resigning his post, was presented with a suitable illuminated address and a purse of money.

Mr. E. W. Winckle was then appointed hon. secretary and treasurer, with Mr. R. Vernon C. Brook as trials hon. secretary, and held office for twelve months or so, when ill-health prevented him from dealing with the increased duties of the club. On his suggestion the joint position of hon. secretary and treasurer was split up, and that of trials hon. secretary done away with. Mr. Brook then became hon. secretary, with Mr. Winckle as hon. treasurer. The club has always been to the front in matters affecting the welfare of motor cyclists, whether members or not, and has endeavoured to further the question of lighting cattle on the highways at night.

In 1908 migration was made to the Imperial Hotel in Temple Street, where the club still has its headquarters in all comfort.

The club caters for its members in various ways apart from competitions, such as an Easter tour, week-end tours, lectures, smoking concerts, etc. A Reliability Trial to Land's End and back is to be held at Whitsuntide this year, which will occupy three days.

The membership is now close on 100, which this year will probably be increased now that the club is in a position to offer free legal defence to all of its members.

The entry fee of 5s. includes a silver buttonhole badge and a rule and run card case; a handle-bar badge may also be obtained on hire for a fee of 1s., whilst the annual subscription is 10s. 6d.

"Your subscription is now overdue." — E. W. Winckle, hon. treas.

A STUDY IN ACCESSIBILITY.

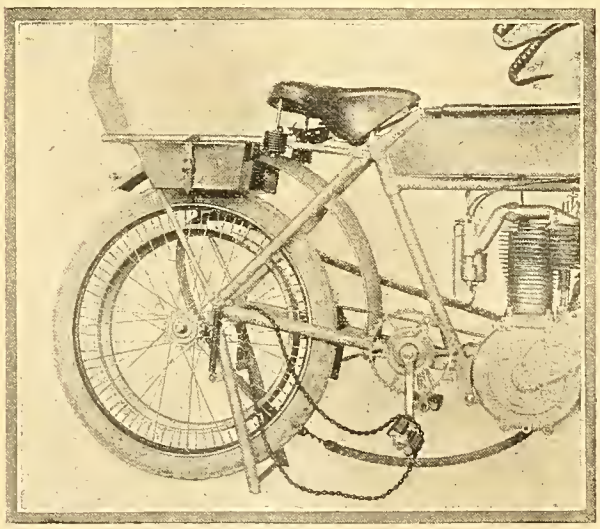
FROM the firm that produced a gear case for push bicycles which gives easy access to the chain, and in later days produced the detachable wire wheel for motor cars, the expert naturally expects something in the way of a motor cycle mount to which a roadside repair will be a thing remote, and when it does come, that the part requiring attention shall be easy of access.

Let us examine in the light of the latest Rudge-Whitworth motor bicycle how far this has been carried out.

A Few Hypothetical Troubles Considered.

Imagine the new owner has ridden his machine several hundred miles without a puncture. At last one of these bugbears occurs. The machine is pulled back with the foot on the bar of the stand, which at once springs into operation and supports the machine with the wheel off the ground. Examination is rendered easy by the back part of the mudguard swinging up out of the way; this also lets the back wheel come out if necessary. To remove the wheel only the two spindle nuts have to be undone and the chain slipped off the chain wheel (of course, the belt has to come off). No brakes have to be disconnected, and there is nothing whatever to hamper the instant withdrawal of the wheel.

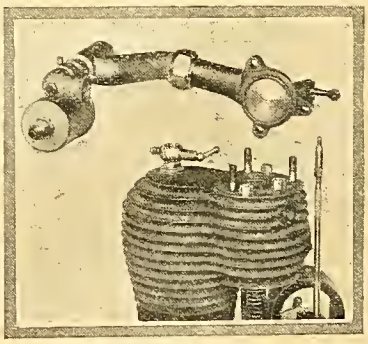
By the way, there is one incident that, except in the hands of the most careful and experienced rider, may take place at any time, and that is running out of petrol. This generally happens equidistant from two places, not less than five miles apart, at which petrol can be obtained, and no machine of 3½ h.p. is a thing of joy to pedal or push a distance of even one mile.



To remove the rear wheel all that is necessary is to undo two nuts on the axle and slip off the chain and belt; the wheel is then free to drop out of the fork slots

How has the difficulty been overcome? By a metal partition or dam placed across the tank. The condition of things when the petrol no longer reaches the carburetter is that in front of the dam there is a reserve of petrol and nothing behind the dam. The rider dismounts, lifts the front of the machine, and some of the reserve petrol runs into the part behind the dam, and a mile or two can then be covered. Even if this fails before a petrol merchant is reached the reserve supply is not exhausted.

With regard to engine accessibility, three nuts release the dome carrying the inlet valve, and then below it is the exhaust valve; the rest is easy and conventional, save that the means of keeping the exhaust spring compressed while the cotter is withdrawn are somewhat simpler and neater than current practice.



The inlet valve, dome, pipe, etc., can all be removed by undoing three nuts.

If the rider suspects that there is an extensive sooty deposit, it is an extremely easy job to remove the cylinder. Four holding-down nuts release the cylinder, and after undoing one union from tank to carburetter the cylinder is quite easy to detach, fouls nothing, and disturbs no adjustments whatever.

Then there is the tank. It is not often that one wishes to remove it, but if it is damaged in any way it is nice, by undoing three clips and disconnecting two unions, petrol and lubricating, to be able to take the tank right out of the frame and get it repaired at an adjacent tinsmith's. That is the reason why all the fittings are on the same side of the tank; nothing projects upwards or downwards on one side to prevent its withdrawal on the opposite side.

The machines at Olympia had no front wheel stand: this is a blemish as regards easy access to the front tyre, which, we learn, will be rectified at an early date.

In conclusion, there is no company that attaches a higher importance to accessibility than Rudge-Whitworth, Ltd. It is a right aim to make all parts so that they never need attention, but to make them easy of access when they do is a kind of wise modesty that might reasonably be adopted by all.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

A Lamp Lighting Wrinkle.

[5279.]—A useful tip occurred to me the other day for lighting a lamp or pipe in a high wind. A sequence of matches, half a dozen or more, are held side by side, with each head just below the one above. The top one is struck, and a flame lasting several seconds that cannot be blown out is thus obtained. C. E. PEPPER.

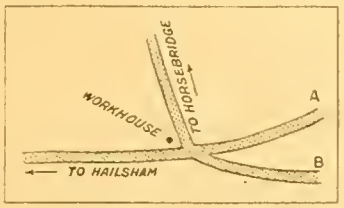
Mending Cracks in the Petrol Pipe.

[5280.]—Riding along the other day, I noticed that the petrol was leaking out of the pipe at a rapid rate. On looking at the pipe I discovered that it had somehow worked itself round, and had been rubbing against the chain of the pedalling gear, and that a fairly large slit was cut in the pipe. Looking over the machine, my eye fell on the rubber tubing of the acetylene lamp. I cut a piece off and forced it on to the pipe, with the result that the petrol entirely stopped leaking, and so satisfactory did it prove that I have not taken it off yet. OSMOND HILL.

[A crack or leakage in the vertical portion of the pipe can be temporarily repaired in the manner described. If the hole is in a horizontal part of the pipe the rubber will soon perish.—ED.]

New Quarterly Trials Course.

[5281.]—With regard to the Quarterly Trials route to Hastings, I notice that in the map printed on page 13 of *The Motor Cycle* the Hailsham Workhouse is indicated on the wrong side of the road. The workhouse is situated in the angle where four roads meet, as shown herewith.



Horsebridge may be reached from Gardner Street by either the road marked A or by B. A is about 300 yards longer than B, but it is a better road, and it avoids four short hills and one rather nasty corner. In any case the men should note that they do not go through Hailsham, which is about one and a half miles south from the workhouse.

Hoping this may be of use to some of the prospective competitors, H. B. JEFFERY.

Motor Cycling in Ceylon.

[5282.]—I have lately taken delivery of a late 1910 T.T. Triumph, and I consider it a splendid machine for this country. I went one day from here 4,800ft. above sea level to Kandy, sixty-five miles, 1,500ft. elevation—a pretty good drop—and along a very twisty road with seven fairly steep gradients for Ceylon. I took it easy, and got there and back in the day. One cannot average much more than 12-15 m.p.h. with comfort and safety in Ceylon owing to the sharp bends in the roads, but the other day I came down from Linvana to Lidula (twenty miles) in threequarters of an hour, but should not care to attempt it again. There was no traffic about, but it must strain the tyres a lot, and it means racing as hard as possible along a straight piece of road for perhaps 100 yards, then jamming on the brakes to go round a right-angled bend or hairpin. I should say 18 m.p.h. could be safely averaged up hill and about 12-15 down hill in Ceylon, and hope to tell you more about motor cycling out here later.

A motor section to the Ceylon Planters' Rifle Corps is just being started, to consist of about twenty officers, N.C.O's. and men. U 32.

Efficiency of Silencers.

[5283.]—*Apropos* of Mr. Sam Wright's experiences of the London to Exeter run we have read with interest his remarks, and we make a suggestion for the quarterly or any other long run, that all silencers should be examined, and the area of inlet and outlet taken and cut outs "barred." We feel certain that the result which would accrue from these measures would go a very long way towards improving the motor cycle, as there is no reason whatever why it should not be as silent and efficient as the average modern car. J. C. LYELL AND CO., LTD.

Water-cooling the Exhaust Valve Cap.

[5284.]—There is a simple method of avoiding overheating when climbing long steep hills (there are many in the district of Ilkley) which I have never heard of anyone adopting, and have found extremely satisfactory in practice. I have a round tank, about 5in. diameter and 8in. long, made out of an old biscuit tin, which I carry on the handlebar, and it is fitted with a filler and small outlet tap. From the tap a pipe leads to a point over the exhaust valve cap. The tank is filled with water, and when necessary this is allowed to run slowly on to the valve cap, a shield being provided to prevent the water spilling over on to the cylinder itself. For solo work one tank full lasts about 150 miles in very hilly country, and for passenger work about a third of that distance.

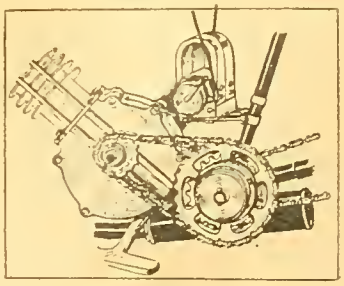
The engine is a White and Poppe, which has a large and deep valve cap, and the machine has two speeds. The effect of the water in keeping up the power of the engine during a long climb is splendid. It must be remembered that the water is all evaporated, and consequently a small quantity absorbs a comparatively large amount of heat.

C. A. ST. GEORGE MOORE.

[Bert Yates used a similar device some years ago in track competitions. We do not recommend its general adoption, as despite the shield a cracked cylinder might easily be the result of cold water coming in contact with a very hot valve cap.—ED.]

Magneto Position.

[5285.]—With reference to the article in *The Motor Cycle* on magneto position, we should like to point out that what is now generally accepted to be the best position for fixing the magneto, i.e., behind the crank case, was originated by this company, and perhaps owing to the longer experience gained by us in this direction, the magneto position of the P. and M. offers conditions possessed by no other. The inclined position of the engine enables the magneto to be set upright whilst retaining a very short drive to the cog on the two to one gear wheel shaft. The consequent neatness of the oil-tight chain case is particularly noticeable. The magneto is also exceptionally high from the ground, which enables the contact breaker to be examined in comfort, and the whole of the mechanism is so placed as to be entirely shielded by the rider's legs, making a protective cover of any sort entirely unnecessary under any conditions.



PHELON AND MOORE, LTD.,
W. PRATT, London Manager.

The State of our Highways.

[5286.]—I was very interested to see H. W. Turner's letter and photograph of the unrolled flints which we encountered outside Salisbury in the M.C.C. twenty-four hours' run on Boxing Day. I consider these were a considerable and quite unnecessary source of danger to the competitors, who struck them at night on Salisbury Plain, and they were impossible to dodge, as they were all over the road, and being of the same colour they were almost indistinguishable at legal limit speeds. The road did not seem to want repairing, and instead of properly broken granite, jagged flints, many of them as big as a man's fist, were strewn haphazard all over the road in heaps. One of these cut clean through the heavy non-skid back cover on my Rudge-Whitworth on the return journey—about six miles from anywhere. The gash extended from the tread to the beaded edge, and looked as if a carving-knife had been stuck through it. Surely the Road Board should move in these matters. R.W.W.

3½ h.p. Single-cylinder Roadsters at Olympia.

[5287.]—As an act of courtesy I am answering Mr. R. Bamford's letter [5273] before receiving a reply from Mr. B. H. Davies against whose statements my criticism was levelled.

Your correspondent admits my contention that springing devices are at present only partially effective, but objects to my describing them as an eyesore. He instances the Druid forks as a notable exception, but wisely refrains from including half a score of others whose unsightly appearance must be evident to even the most optimistic enthusiast.

Will Mr. Bamford think more kindly of me, upon remembering that the adjective ugly has three degrees of comparison, and that I am willing to admit that the positive one applies to the forks he mentions?

With reference to the challenge to design a frame from which one can "fall off quicker" than is possible in the case of the diamond: I throw up the sponge, the task is beyond me, but if your correspondent requires a machine that he can *dismount* from quickly and in safety, there are, I believe, several firms waiting to supply his wants.

R. WENTWORTH COOK.

Gear Variation by Slipping a Clutch.

[5288.]—Lest your correspondent's (Mr. Frasetti) mistaken notion as to the utility of a clutch and its slip being convertible into driving power should mislead others, allow me to point out that, although a friction clutch is the best medium to gather power from rest to normal set gear, it is ridiculous in the extreme to suppose that any permanent intermediate ratio of gear is maintained by any type of slipping clutch. It is utterly impossible to retain or utilise that power which is lost by slipping. The amount of slip and speed is governed by the horse-power one utilises. Thus, the bigger the horse-power the bigger the latitude of slip—this, and nothing more. My practical experience with clutches extending over a period of ten years (during which period thousands of clutches have passed through my hands), entitles me to speak authoritatively on this point, and the public should understand that a clutch *per se* is only the medium to accommodate power to the load.

The introduction of gears is of as much advantage as the addition of a clutch to a fixed gear machine, in such form that both the power of the engine and the utility of the clutch can be correctly employed.

ARTHUR W. WALL.

Needed Improvements.

[5289.]—I was pleased to see friend Sykes's reply to my letter [No. 5202] in your issue of the 5th inst., but at the same time it caused me no little amusement.

Judging by the explanations offered I have come to the conclusion that the same unfortunate clerk upon whom he lays the blame has had the painful duty of writing this reply.

Friend Sykes says that the A.S.L. was advertised for sale through an error on the part of his clerk, and also that the distance ridden on that machine, viz., 200 miles, was a careless estimate of the same clerk. Does he think that any intelligent person will accept this as an explanation? If the A.S.L. was not intended for sale, why did the clerk (who generally acts upon his master's orders) make an estimate at all? Let him take the blame upon his own shoulders instead of trying to put it on his clerk.

Continuing, he says that the 1,000 miles was an under estimate of his. I was surprised to see that he acknowledged at least one mistake was caused by his own carelessness. Could he not have blamed the office boy for this?

Friend Sykes will now see his "careful reckoning" (that he referred to) should have come before his letter and not afterwards.

As to the advice he offers me, does he think that anybody will care to accept his advice after reading his contradictory letters?

I should like to point out to him that he has not replied to the question in my last letter as to how many A.S.L.'s he has had. I should particularly like this question answering, as this may possibly once more alter his mileage.

W. A. ARMITAGE.

Cost of Running a Motor Cycle.

[5290.]—For the benefit of "Shy but Willing" (5232), I give the cost of upkeep of my 1910 standard 3½ h.p. Triumph. The period over which it was used was from March 26th to September 3rd. The total mileage was 3,890 miles.

	£	s.	d.	Rate per mile.
Petrol, 37 gallons (105 m.p.g.) ...	2	5	11	.1419
Oil, 1½ gallons		5	0	.0154
Belt		18	0	.0555
Tyres (one new cover and tube and repairs)	3	19	6	.2452
Accessories (horn, plug, belt, punch, etc.)		13	4	.0411
Engine repairs, valve, etc. ...		6	6	.0201
Cycle repairs (fork springs, stand, etc)		11	3	.0347
Total	£8	19	6	.5511d.

The tyres should wear another 4,000 miles before being replaced. Licences are not included.

THEO. E. ROBERTS.

A MOTOR CYCLIST OF 21½ STONES.—THE RECORD.

Alderman Rennard, of the Brunswick Hotel, Bridlington. Mr. Rennard is one of the oldest riders of a motor cycle in Bridlington. He started riding in 1903, and during the summer can be seen riding his machine—a 2¾ h.p. Excelsior—almost daily. Although Mr. Rennard's weight is 21½ st., the record for a motor cyclist, he does not require a clutch model but mounts in the usual manner.

Gear Variation by Slipping a Clutch.

[5291.]—In reply to Mr. Arthur H. Appleton, I regret that I cannot give him any information about the Triumph clutch, my experience only relating to the Indian.

ERNEST FRASETTI.

Revenue Licences in "Clean" Counties.

[5292.]—Will you grant the privilege of asking through the medium of your correspondence columns that all Metropolitan motor cyclists should pay their motor cycle licences in any postal money order office situated in a clean county.

Bedford, Suffolk, and Leicester may be cited as counties in which no police traps have been reported for 1910, whilst London with its twenty-three traps, twenty-seven in Middlesex, and the scandalous total of sixty in the notorious and vindictive county of Surrey, are districts in which every licence holder for motor cycles, armorial bearings, dogs, etc., should avoid payment.

A most interesting article on this subject, giving a full list of clean and unclean counties, appears in *The Autocar* of January 14th, detailing instructions for payment, etc.

W. H. BROWNE.

Sportsman or Potterer.

[5293.]—I was delighted to read Mr. Desmond Young's reply to "Ixion" in last week's issue.

I have had seven motor cycles, starting with two chain-driven Humbers in 1903, about the time your admirable paper started, and I buy a new Triumph every year.

During the summer I can safely say that my motor bicycle is the joy of my life; I often ride 150 miles a day or more—yet I loathe "tinkering" with it. I have not the smallest wish to grind in my own valves, or mend my own punctures, though perfectly capable of doing so. Is the owner of a big car considered an incapable fool and a "duggins" because he employs a chauffeur to do his repairs for him? Finally, I have never ridden in a reliability trial, have never witnessed a hill-climb, and never intend to do so. Do give a little space to us "potterers," for there are thousands on thousands of us.

In conclusion, I am not in my second childhood, my age is 28 years, and I also would love to go for a "potter" with "Ixion." FE 462.

[5294.]—I should like to say a few words about "Ixion's" remarks in your issue of December 29th, 1910.

I am a beginner and come within the category described by "Ixion," whose remarks are partly contemptuous while recognising that my type has come to stay.

My position is as follows: The slavery of riding a push-bicycle drove me to seek an easier mode of locomotion. I was prepared to take a close interest in my machine, to endeavour to understand the various mechanical parts, to give the machine every care, and to see that it was periodically overhauled and examined. Beyond small repairs when on the road, such as punctures, choked nipples, and dirty plugs, I rely on the initial efficiency of the machine and the overhauls I have spoken of.

I therefore invested in a new 3½ h.p. free-engine Triumph some three months ago, and so far it has come up to my expectations, although I have not covered much ground yet. However, I cannot fail to notice when reading your pages that even in the hands of experts far too many defects take place, which must be remedied if the motor cycle is to become at all universal.

You will perhaps allow me to make a personal explanation in case my position might be misunderstood. I am a keen cruising yachtsman, taking charge of my own craft in every detail from fitting out to navigation, and endeavour to master all details, but can hardly regard my motor with the same feelings of affection as I do the yacht.

Apart from mechanical details, which I am not competent to discuss, I think my machine is lacking in adequate mudguards for the front wheel, and the lamp is not proof against strong winds. The mudguards as supplied by the firm are no better than on an ordinary cycle, which in wet weather specks one's clothing considerably. With the higher speed of a motor, surely more protection is needed, and I have fitted two pieces of canvas laced one on each side of the mudguard and secured to the hub. This is cheaper than the sheet-iron device you illustrated some weeks ago, and can be removed for cleaning. I have also adopted the suggestion of a friend and hung a square piece of canvas (with a horizontal lath at top and bottom) in front of the magneto flap (so that the air has a free flow to the cylinder), and reaching within an inch of the ground. These two fittings keep a lot of mud off both rider and cycle, besides saving the belt.

I read an article in your issue of December 29th *re* cleaning a motor cycle, and feel it will be of help to me, but here again makers will have to see that machines are more weather-proof. I find it takes three hours to clean a motor cycle, and from what "Rex" says this must be done frequently. He lays stress on keeping the spokes bright, particularly where they join the hub. Now I have no objection to keeping my motor clean, but think more attention should be given to producing a machine which would be less liable to rust, and smart looking at the same time.

Be one ever so anxious it is more than difficult to clean the spokes, particularly those of the back wheel, which in my case has a fitting for the brake as well as a belt drum.

Sufficient attention does not seem to be devoted by manufacturers to producing a lamp for use in stormy weather. One night this winter my lamp (made by a well-known firm) went out several times when riding against a fresh head wind I had a piece of rag in my satchel, and fastening this round the air holes got home safely.

It must not be forgotten that a motor bicycle enters into rivalry with small cars. I am sometimes told by my friends that a motor cycle is a selfish mount. It is true that a sidecar does away with part of the objection, but it is not everyone who cares for this mode of locomotion.

In an 8 h.p. car you are independent of weather, whereas I am afraid the majority of riders of a motor cycle would say weather conditions do affect them.

I am writing as a member of a new class of motor cyclists, and hope my impressions are of sufficient interest to your readers to warrant publication. FRANK GILLILAND.

[5295.]—I have read with amazement and much amusement the extraordinary letters of Messrs. Desmond Young and Chas. S. Patterson, in which they attack "Ixion" in a paroxysm of refined rage.

If the two gentlemen had only thought twice, they would have saved a lot of ink, and we should have been spared the pain of reading a large amount of "twaddle," backed up by some incomprehensible and illogical statements. Further, had Messrs. Young and Patterson paused for a few minutes and glanced at "Ixion's" articles for the past twelve months, they would have discovered that they, being blinded by prejudice, were trying to kill their best friend and champion.

"Ixion" being pretty tough-skinned, such an outburst of impetuous indignation will only cause him to smile.

It is perhaps hardly fair to dub riders of lightweights and two-speed gear machines "potterers."

I infer from Mr. Desmond Young's remarks that, firstly, he charges "Ixion" with being a reactionary, and, secondly, that the modern single-geared twin, or single, is dangerous to drive on bad roads and is *unreliable*. Mr. Young, being so ignorant of the reliability of motor cycles generally, should read the reports of the recent M.C.C. trial and other rides of the same nature.

No one man has done more (during the last twelve months) than "Ixion" to encourage the change-speed gear machine and the lightweight, and to cry out loud and often for the improvements that Messrs. Young and Patterson require. If this is Mr. Desmond Young's conception of a reactionary, then there must be a kink somewhere in his top storey.

Should Mr. Young ever meet "Ixion" on the road, he is likely to be left pottering along in the rear, as a man who takes no interest in that delightful occupation known as "tuning up" (but leaves such work in another man's hands who has not the slightest interest in the machine) will never obtain the last ounce of power that every thorough-going, enthusiastic sportsman is so desirous of doing.

Mr. Charles S. Patterson is afraid that we shall deem him prejudiced. Well after his letter I think the indictment will be carried unanimously. Mr. Patterson's definition of a single-geared 5 h.p. twin is a Gatling gun. Now I wonder if Mr. Desmond Young agrees with this definition of his 5 h.p. Indian. I can remember seeing an Indian machine pass along one of our main streets recently, and the exhaust was inaudible twenty feet away. (This on a standard model.)

I wonder if Mr. Young agrees with Mr. Patterson that his 5 h.p. Indian is a piece of mechanism unfit for the road.

Mr. Patterson actually admits that the 3½ h.p. single is a "wonder," but he is very wide of the mark when he says that we have reached the limit of flexibility. Some 3½ h.p. engines develop 5 h.p., others about 2½ h.p.; it all depends primarily upon the rider. Quite recently a 3½ h.p. J.A.P. engine has developed nearly 7 h.p., and we have not reached the limit yet. This ultra-efficiency is the result solely of the speed merchant, and yet we are told by Mr. Patterson that the speed of motor cycles is keeping thousands out of the ranks of motor cycling.

If forced induction is proved by racing men to render the engine still more efficient, Mr. Patterson and others will be the ones to gain by the speed men's experiments.

But for speed events most of us would to-day be mounted on a cumbersome 7 h.p. twin with two-speed gear, the whole weighing some 300 lbs. or more, and we should be vying as to who would be the first man to climb Sutton Bank on top gear. The moral seems to be that "what is one man's food is another man's poison.

After all, "Ixion" did ask for the single-geared 150 lb. twin to be placed in some obscure corner, and I now ask the manufacturer also to put a cover over it marked "dangerous," otherwise we may witness at the next Olympia Show a veritable Kilkenny fight, in which the advocates of singles and twins, lightweights and heavyweights, two-speed gears and variable pulleys, and belts and chains, will be engaged in a fight to the death, and who can foretell the result? Perhaps "Ixion," if he lives to tell the tale. HUGH GIBSON.

Passenger Motor Cycles. Why Not Steam?

[5296.]—With reference to letter 5257, I think "Amateur" will find that the chief reasons acting against steam propulsion for four-wheeled passenger cycles are the following:

(1.) Brains and enterprise above the average are required for the production of a light steamer.

(2.) An unreasoning and ignorant prejudice on the part of the larger number of motorists, carefully bolstered up by manufacturers and those interested in the petrol car. Note the careful means taken to exclude the steamer from hill-climbs, reliability runs, etc.

(3.) The baneful influence of some of the early steam cars. These were frequently sent out without such necessaries as super-heaters, forced draught, return feed arrangements, etc., and naturally people were soon disgusted with them.

If I had the time and means I should certainly experiment in this direction. H. E. RENDALL.

The M.C.C. Winter Run.

[5297.]—As I have a new two-speed Douglas on order, I naturally looked forward to seeing at least one being entered for the M.C.C. winter run, but they were all standard models. I should have thought that the Douglas people would have only been too pleased to have an opportunity to prove the reliability and efficiency of their two-speed models, seeing that other makers were not afraid to enter their two-speed lightweights in open competition. I, and I have no doubt other prospective owners, would like to hear why Messrs. Douglas Bros. shirked entering a two-speed model.

F. W. ASHBY.

[We submitted a copy of the above letter to Messrs. Douglas Brothers, and append their reply.—ED.]

Sir,—We beg to thank you for your letter of the 11th inst., enclosing copy of letter, and for giving us an opportunity of replying to same.

Mr. G. L. Fletcher entered a Douglas two-speed model in the M.C.C. winter run, but, unfortunately, just before the trial he met with an accident, which prevented him riding. We should like to say that before putting our two-speed model on the market we subjected it to all the most severe trials of 1910. The three two-speed machines that went through the Six Days' Scottish Trial were successful in carrying off the prize for the best team of three machines. Two of these machines successfully went through the A.C.U. Land's End to John-o'-Groat's, and, although there was a total entry of eighty-one, only three machines obtained full marks. One of these was a two-speed Douglas. Further, our Mr. W. W. Douglas, on a two-speed machine, was second in the A.C.U. open hill-climb at Sutton Bank, but was disqualified on the ground that it was not a machine as sold to the public, it being a 1911 standard model E, which had not then been offered for sale. No doubt you will remember that you rode a Douglas two-speed machine from London to Bristol. Also our Mr. Phillips called on you at Coventry when he was giving one of these machines a thousand miles test in the most vile weather, and you gave the machine a short trial, and referred to it in the next issue of your esteemed paper.

We need hardly add that we should not risk our reputation by putting on the market a new model without first subjecting same to a most severe test, and we think the success the two-speed machines have achieved in the various trials fully justifies us in offering the machine to the public.

DOUGLAS BROS.

A Mechanically Operated Scavenging Device.

[5298.]—In your issue of December 22nd you illustrated a scavenging device which has moved me to send you an idea I had some months ago, and for which, added to the other advantages, I claim simplicity, besides which the cylinder would be no longer than the standard.

The idea consists in bringing the piston up to within 1-16th of the cylinder head every other revolution. This is done by an eccentric on the crank pin driven by 2 to 1 gearing. On the compression stroke (fig. 1) the piston is in the normal position, but by the time the flywheel has done one revolution the eccentric has travelled to its highest position (fig. 2).

A is a gear wheel fastened to the crank case and drilled for the main shaft. B is another gear wheel meshing with A, and connected by shaft C, through the flywheel, to gear

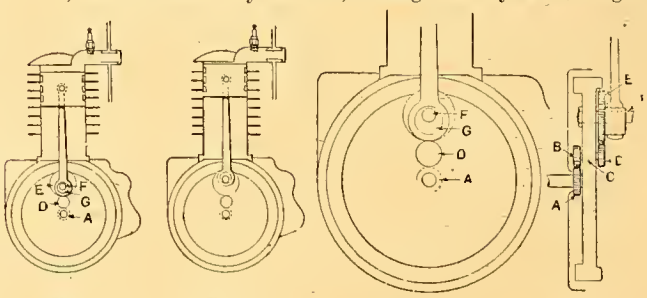


Fig. 1. Fig. 2.

wheel D. This drives the gear wheel E, which has twice the number of teeth, and revolves on the solid crank pin F, carrying round with it the eccentric G.

T. PARKINSON.

[Although devices of this nature are very ingenious and interesting, it may be useful information for our readers if we point out that many makers of car engines, particularly racing engines, are chiefly concerned in getting a full charge of gas *into* the cylinder, their contention being that it will get out without mechanical aids such as the one described by our correspondent.—ED.]

Magnetos behind the Cylinders.

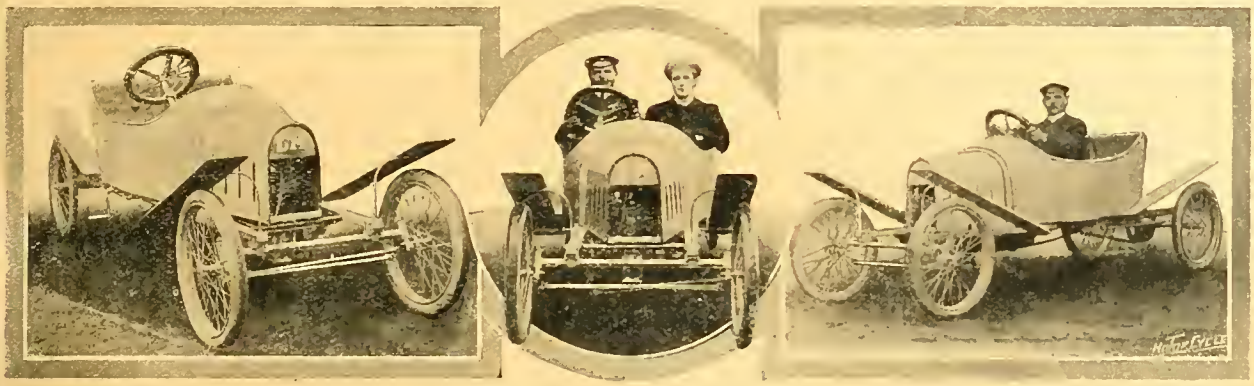
[5299.]—A number of letters and articles, some humorous, some writ "sour caustic," as Dan Leno would have said, have appeared as a result of a report in your journal of what I was said to have said at Mr. H. G. Cove's paper read before the Essex M.C. I hardly know whether to feel annoyed at having been mis-reported, or pleased at having brought to light so much native wit and ingeniously-veiled self-advertisement.

I have been fathered with the statement that the centre of gravity of a motor cycle, and, therefore, the steering, is materially altered by placing the magneto behind the engine. As a matter of fact, during the discussion on the paper I drew attention to the suggestion that had already been made that the steering is unfavourably affected by moving the magneto from in front to behind the engine. If I recollect rightly, I remarked, or at least implied, that I did not think there was anything in it. I do not think that I have seen it suggested anywhere that if the magneto is not in front the engine may be placed further forward and the steering possibly improved.

What I am glad to see is a fashion setting in for putting the rider more between the wheels than formerly. I have always maintained that "over the back wheel" is radically wrong. J. W. G. BROOKER.

THE L.M. QUADCAR.

ANOTHER small and light quadcar has been designed by Wm. M. Cunningham, of Clitheroe. With the decline of the tandem form of tricar it is considered that there is a big future for a two-seater on the lines of a quad but specially strengthened. In the runabout illustrated—it can hardly be designated a car, for it is built on motor cycle lines throughout—a 7 h.p. J.A.P. twin-cylinder air-cooled engine is used, mounted in front, and driving through a two-speed gear box with gears always in mesh and operated by dog clutches. Transmission is by Renold chains to a differential on the back axle. There are two compensating band brakes operated by a pedal. The engine is fired by a Bosch magneto, and, it is stated, can be started from the seat. The control of the B. and B. carburetter is on the steering wheel. The frame and springing are of registered design, and the wheelbase measures 8ft., and track 3ft. 3in. As will be gathered from our illustrations, the L.M. quadcar apes its big brother car in every particular, the torpedo body being unusual with this form of vehicle. Its lightness will be appreciated when we say that it can be lifted clear of the ground by two men.



Side and front views of the L.M. quadcar, a four-wheeler built on motor cycle lines.

THE A.A. AND M.U. AMALGAMATION.

What it Proposes to do for Motor Cyclists.

THE meeting held at the Hotel Cecil on the 10th inst. imbued us with the idea of seeking further information regarding what the A.A. and M.U. intends to do for motor cyclists. So a visit was paid to Fanum House, Whitcomb Street, where lives the brain that controls the whole organisation. We found Mr. Stenson Cooke only too glad to expound his scheme.

"Firstly, let me tell you," said he, "we exist, as I said at the M.C.C. dinner, solely to serve the interests of the individual, and not to interfere with the governing body."

"Tell us more," we ventured.

"The subscription has been reduced from 12s. 6d. to 10s. 6d., which sum entitles motor cycle members to enjoy the same privileges as car members. What those are you know."

"We do know, but many of our readers may not share our knowledge."

"Well, you may say that these privileges include free legal defence, touring facilities in Great Britain and on the Continent, hotel arrangements, insurance facilities, an excellent handbook, a badge which obtains attention and politeness everywhere, and last, but not least, the greatest attraction of all—the patrol organisation

"Touching the latter," continued our informant, "our men are specially instructed to give motor cyclist members the fullest attention, and it may interest you to know that the patrols often get valuable assistance from sporting motor cyclists—and motor cyclists are sportsmen, you know—by taking messages from one scout to another.

"Motor cycle members may also get help from our numerous provincial depots—in Manchester, Liverpool, and Leeds (just opened); in Scotland, Glasgow and Edinburgh; in Ireland, Dublin and Belfast; and in France, Paris. At all these depots legal advice and touring information can be obtained, which latter is not derived from maps, but from men who have the 'sense of the road.'

"For example, one of my staff, now in charge of a branch office, contributed widely-read cycling notes for a well-known Northern paper for twenty-five years.

"You may also be interested to know that we are specially looking after the interests of the riders for whom you cater, in the way of hotels and repairers."

"Have you made any other changes since the amalgamation?" we asked.

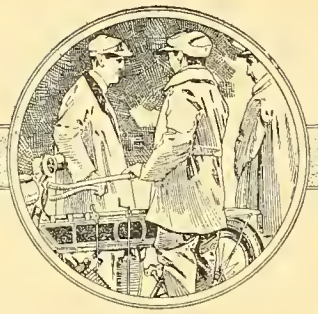
"I have already mentioned that the subscription formerly was 12s. 6d., now it is 10s. 6d."

"And do you not propose further to reduce this sum?"

"No," replied Mr. Cooke; "we have no idea of doing anything of the kind. We are prepared to give members full value for their money, and how we do this I have already told you. Remember, also, that motor cyclists are well represented on the committee. Finally, let me emphasise the fact that we are not concerned with trials and competitions; in a word, we are interested only in those trials and tribulations of the motor cyclist which it is our pleasure to smooth over."

The buzzing of telephones and the entry of sundry subordinates by this time proclaimed that others than ourselves were demanding their share of Mr. Stenson Cooke's valuable time.

CURRENT CHAT



Time to Light Lamps

Special Features

(Greenwich).

Jan. 19th	... ...	5.23 p.m.
,, 21st	... ...	5.26 ,,
,, 23rd	... ...	5.29 ,,
,, 25th	... ...	5.32 ,,

American Governing Body.

The membership of the Federation of American Motor Cyclists numbered 5,700 at the end of last year.

An Old Hand.

Sam Wright, whose experience with motor cycles dates back to the days of the old Excelsior, has rejoined Humber, Ltd., and may be expected to be to the fore in motor cycle competitions during the year. Wright was a member of the first team to capture *The Motor Cycle* challenge cup when it was competed for at Bicester.

W. Creyton About Again.

Acquaintances and friends of W. Creyton will be pleased to hear that he returned to his duties at the Triumph Works last Monday. His medical adviser has cautioned him not to ride a motor cycle for a time, but he is well able to walk, and will, we hope, be seen in the saddle again before long.

Result of the Hutchinson Competition.

The fortunate winner of the 5 h.p. T.T. twin Matchless, which was offered as the first prize in the competition organised by the Hutchinson Tyre Co., 70, Basinghall Street, E.C., is Mr. Hugh J. Baty, of Gerrards Cross. The winners of the five other prizes are: 2nd, G. Murgitroyd, Leytonstone; 3rd, F. Hollingworth, Alfreton; 4th, O. Paul Monckton, Oundle, Northants; 5th, J. J. Cookson, Sandbach, Cheshire; 6th, G. Scott Malden, Oxford. The winners of the agents' prizes are: 1st, W. Stewart, Belfast; 2nd, R. Holt, Heywood; 3rd, W. E. Chew, Manchester; 4th, W. Kilby, Caterham Valley, Surrey; 5th, divided between Hugh Rae, West Hartlepool, and A. Spaul, Norwich. It will be remembered that the competition was to give the exact figures of, or the nearest figures to, the correct percentage of each of the sizes of the tyres used by the competitors and their friends in the competition. The competition, therefore, automatically decided itself by means of the sizes supplied by the competitors. The gentlemen who acted as judges for the Hutchinson Tyre Co. on this occasion were Mr. F. Straight (A.C.U.) and Mr. E. St. Clair Duncan *(Cycle and Motor Trades' Review)*. As is usual in all competitions, some errors were made by competitors in filling up their forms. The presentation was made personally by Mr. A. Mellano, director of the Hutchinson Co.

Motor Cycle Show at Leicester.

The Leicester Motor Cycle and Cycle Show, which was so successful last year, will be held again in the Association Halls, London Road, Leicester, February 8-11 next. The secretary (Mr. H. E. Smith, 21, London Road, Leicester) will be glad to hear from the secretaries of motor cycle clubs in the district who are proposing to hold an official run to Leicester for the Show.

FUTURE EVENTS.

Jan. 26—Auto Cycle Union Annual Dinner.
,, 28—A.C.U. Quarterly Trials (Metropolitan centre). Croydon to Hastings and back.
Feb. 6-11—Auto Cycle Union Lamp Trial at Brooklands.
,, 8-11—Motor Cycle Show at Leicester.
,, 16—M.C.C. Smoking Concert.
Mar. 18—M.C.C. Opening Run.
Apr. 8.—Oxford M.C.C. Open Hill Climb.
,, 14-17.—M.C.C. London - Land's End Trial and Easter Tour.
,, 22.—A.C.U. Quarterly Trial (Yorkshire centre).
May 13—M.C.C. Hill Climb.
,, 27—Bristol B. & M.C. Open Hill Climb.

End-to-end Lightweight Record. Presentation to Mr. Eli Clark.

On Friday evening Mr. W. Douglas, of Bristol, entertained to dinner numerous Bristol motor cyclists and friends, the occasion being the presentation of a handsome gold watch (suitably inscribed) to Eli Clark for creating the End-to-end twin lightweight record of 39h. 40m. on a Douglas motor cycle. Mr. W. Douglas presided, and the company present included the recipient, Dr. Patterson, Dr. Llewellyn, Messrs. E. S. Hare, P. Grout, E. J. Prosser, Kickham, Phillips, Wasley, Blocksidge, Barter, Cuffe, Weekes, A. Douglas, and many others.

Eli Clark.

THE TRADE AND THE TRIALS.

FACTS ABOUT TWO-STROKE ENGINES.

LEADING MOTOR CYCLE CLUBS.

The occasion was a thoroughly enjoyable one, tales of the road being freely circulated, and incidents in a memorable year recalled, while in Messrs. Davies, Goodman, and Norman were found three clever comedians to vary a programme of song and mirth. Messrs. Grout, Rhymes, and others also contributed.

Dr. Llewellyn proposed "Our Host," and Mr. Douglas replied in a speech in which he gave an interesting account of the development of the Douglas motor cycle.

Mr. Douglas afterwards presented the gold watch to Eli Clark, and described the adventures on the memorable record ride.

Mr. Eli Clark responded, and in turn presented Messrs. Ball, Phillips, Haslam (Sheffield), Wasley, Grout, Thornhill, and W. W. Douglas (helpers) with silver cigarette cases as mementoes of the ride. Mr. Wasley replied, and the other toasts were "The Visitors," "The Motor Cycle," and the "Bristol Bicycle and Motor Club."

Motor Cyclists for President's Guard.

During his trips by motor car about the city of Washington, the American President is accompanied by specially picked men of the Washington police force mounted on motor cycles. Two further R.S. motor cycles have recently been ordered for the use of the squad.

The American Invasion.

The manufacturers of the Thor motor bicycle have advised us that their machines will shortly be handled in Great Britain and Ireland by an important firm of motor cycle dealers. This makes the fourth make of American motor bicycle to be exploited in this country.

The Motor Cycle as a Means of Improving the Health.

In the early days of the movement it was by no means a rare occurrence for a doctor to advise a rider to give up his machine, as it might seriously affect his heart. This was in the days of sluggish starting unsprung motor cycles. Quite recently we received a letter from a correspondent, in which he says, "I have a weak heart, which, I am thankful to say, has been greatly benefited by the riding, and from which I have had no serious trouble for the last two years." What better testimonial can the motor cycle have?

Cecil Rhodes (1½ h.p. Moto-Reve), winner of the Victorian Motor Cycle Club's handicap hill-climb at Frankstown, Vic. There were 32 competitors.

Summer Competition in Victoria.

Seventy members of the growing Victorian Motor Cycle Club journeyed to Frankstown, Vic.—a distance of twenty-six miles from Melbourne—on Saturday, the 10th December, to witness a handicap hill-climbing competition. The thermometer was in the neighbourhood of 85°. The hill abounded in twists; it was a quarter of a mile in length with an average gradient of 1 in 6. Competitors—thirty-two in number—were sent up the hill in pairs, and the result was: 1. Cecil Rhodes (1½ h.p. Moto-Rêve); 2, Harry Jenkins (3½ h.p. T.T. Triumph).

Launceston Club's Reliability Trial.

The annual reliability trial of the Launceston A.C. was to Hobart and back, a journey of 260 miles. In the motor cycle class nineteen competitors started, and sixteen finished without loss of marks. The winners of the various classes were: Motor cycles up to 2½ h.p., R. B. Sutton (2¼ F.N.); motor cycles up to 4½ h.p. singles, C. M. Dyer (3½ h.p. Royal Allard); motor cycles over 4½ h.p., twins, S. B. Sutton (6 h.p. N.S.U.).

B.M.C.R.C. Meeting and Programme.

The enterprising British Motor Cycle Racing Club will hold its annual general meeting at the offices of the B.A.R.C., Carlton House, Regent Street, W., at 7 p.m., on Tuesday, the 31st inst. The annual report and balance-sheet, sent with the notice of the meeting, shows the club's affairs to be in a satisfactory state and indicates the good work done by the club in organising races at Brooklands during 1910. The first members' meeting will be held at Brooklands on Saturday, March 18th, at which the following events will take place: 2 p.m., All Comers' Penalty Handicap. 2.30 p.m. First Junior One Hour T.T. Race. 3.45 p.m., First Senior One Hour T.T. Race.

Motor Cyclist Marshals Wanted.

As the new Quarterly Trial course is rather a complicated one, numerous helpers are needed by the Auto Cycle Union to marshal the men and direct them on to the right road at doubtful corners. Motor cyclists who can assist the Union, and their assistance will be heartily appreciated, should communicate with the A.C.U. secretary.

Selling the Old "Wheel."

Prospective Purchaser: Mechanical oiler? Dealer: Finest you ever saw, my boy (points to ordinary hand pump). Just push this piston once in a while, and by and by it becomes second nature; you don't have to think about it—it becomes mechanical.—*Motor Cycling*, Chicago, U.S.A.

Quarterly Trial.

Entries for the Quarterly Trial on the 28th inst. received up to the time of going to press were:

W. Cooper (3½ Bradbury).
A. J. Stevens and Co. (2½ A.J.S.).
A. J. Stevens and Co. (2½ A.J.S.).
Premier Cycle Co. (3½ Premier).
Premier Cycle Co. (3½ Premier).
Scott Eng. Co. (3½ Scott).
Percy Butler (Dot).
A. J. Luce (8 Bat).
H. Greaves (2¾ Enfield).
W. H. Islip (2¾ Enfield).
J. W. Woodhouse (3½ Calthorpe).
A. C. Robbins (3½ Humber).
H. S. F. Morgan (8 Morgan Runabout).
C. S. Burney (3½ Rudge-Whitworth, new engine starting device).
Alan Hill (3½ Rudge-Whitworth).
V. Surridge (3½ Rudge-Whitworth).

Mr. R. G. Nye informs us that he surveyed the whole of the new Trials route per motor cycle on Tuesday last week, and found the surface of the by-roads atrocious. He adds that if the roads are in the same condition on the 28th the trial will be a very exhaustive test for the single-geared machines. "One of the main difficulties will arise in the competitors losing their way, and I should like to propose that at the complex turnings (after leaving Bexhill, for instance) guides should be stationed to direct competitors."

Sequel to an Accident.

H. E. Davison, of Islington, has been awarded £26 at the Westminster County Court for damages to his motor cycle. It appears that the plaintiff stood his motor cycle by the kerb, and a L.C.C. tramcar came along, also a van travelling the same way ahead of the car. The tram ran into the van from behind, the force of the collision causing the latter to crash into the motor bicycle and "scrap" it.

T.T. Race.

Entries for the 1911 Tourist Trophy Race number twenty-three up to date, the names being as undernoted:

C. R. Collier (holder).
W. O. Bentley.
A. J. Moorhouse.
W. H. Bashall.
J. T. Bashall.
A. B. T. Bashall.
Triumph Cycle Co. (two singles).
Blumfield, Ltd. (three machines).
Hendee Manfg. Co. (two twins).
F. A. McNab (two singles).
P. Brewster (one single, heavy; one lightweight).
C. E. Murphy (one single).
D. C. Bolton (one lightweight).
J. L. Norton (one single).
Douglas Bros. (two lightweights).

Lever Action for Pedalling Gear.

Dr. J. H. Potter has sent us copies of correspondence which has appeared in *The C.T.C. Gazette* on the subject of the substitution of lever action for rotary to the pedalling axle of a motor bicycle. This is an idea which has occurred to many motor cyclists from time to time, but no manufacturer has up to now had the temerity to introduce it. In the case of a machine which only requires the pedals for starting and never for assisting it up hills, we think a lever action would be an advantage, because both levers when at rest could be used as footrests. An arrangement something on these lines is used on the L.M.C. We remember seeing a design for a motor cycle on paper some years ago embodying the lever pedalling device, but it never got beyond the drawing board.

Group at the Derby and District M.C.C. hill-climb near Alsop-en-le-Dale. The winner, Geo. Brough, is in the centre, and the club's lady member, who rides a Hobart, is seen at the extreme left.

CLUB NEWS

Essex M.C.

All arrangements are now complete for the fifth annual dinner, which is to be held on Saturday next, the 21st inst., at the Holborn Restaurant, W.C.

Walthamstow M.C.

The annual general meeting will be held at headquarters, "The Rose and Crown," Hoe Street, Walthamstow, on Wednesday next, the 25th inst., commencing at 8 p.m.

Cornwall M.C.C.

The first general meeting of the above club is to be held at the Red Lion Hotel, Truro, on Saturday next, the 21st inst., at 6.30 p.m., to pass the rules and elect officials. All interested are invited to attend or communicate with the hon. sec., Mr. G. E. Vint, 5, Kimberley Place, Falmouth.

Bishop Auckland, Darlington, and District M.C.

On Wednesday evening last week, the first lecture in connection with the club's winter programme was delivered at the King's Head Hotel, Darlington, by Mr. A. E. Bennett (Bosch Magneto Co.), who gave his interesting lecture on magnetos, before a good attendance of members and friends.

Plymouth and District M.C.C.

The above club is holding the annual dinner at Sleeman's Restaurant, Old Town Street, Plymouth, on the 26th inst. at 8 p.m. There will be a musical programme and distribution of prizes which have been won during 1910. All members and friends are invited. Club members and friends tickets 2s. each; non-members 2s. 6d. Tickets may be obtained from Mr. Holmes, Vauxhall Street, Plymouth, or Mr. Exelby, 8, Lisson Grove, Mutley Plain, Plymouth.

Exeter and District M.C.C.

The annual general meeting for the election of officers, and other business, will be held at 7 p.m. to-morrow (Friday), at the Exeter Garage Co.'s premises, Paris Street, Exeter.

The above club is holding a reliability trial on the 22nd inst., from Exeter to Penzance and back, a distance of 222 miles. The trial will be ridden to a schedule of 18 m.p.h. There will be an interval of 1 hr. 40 min. at Penzance. Competitors will ride in pairs, the first pair being started from the Exeter Garage Co.'s premises at 6 a.m. Riders will sign the checking sheets at Taylor's Garage, Penzance.

Ilkley and District M.C.C.

A general meeting was held at the Crescent Hotel, Ilkley, on the 9th inst., when there was a good attendance. Mr. W. Robinson occupied the chair. The officers were elected as follows: President, Mr. T. Archer Pearce; vice-president, Mr. F. H. Thompson; hon solicitor, Mr. J. Wickstead Perkins; hon. treasurer, Mr. W. W. Robinson, Leeds Road, Ilkley; hon. secretary, Mr. J. Norman Longfield, Laurel Bank, Ilkley; committee, Messrs. Denison Wilson, J. Wickstead Perkins, B. Platt, W. H. Small, C. Thackay, and H. Moore.

The subscription was fixed at 10s. 6d., of which 6s. 6d. is due on January 1st, and 4s. on July 1st of each year. The subscription includes affiliation to the Auto Cycle Union, subject to acceptance by that body.

Newcastle M.C.

An important step was taken at the annual meeting of the above club on Tuesday evening last week. The club has decided to give its allegiance no longer to the N.E.A.A., but to become affiliated direct to the R.A.C. and A.C.U.

The financial statement of the honorary treasurer, Mr. A. Parkin, showed an income amounting to £74 3s. 4d. At the close of the year there was a credit balance of £4 2s. 3d.

The chairman of the club, Mr. Arthur J. Lucas, in moving the adoption of the secretary's report and balance sheet, complimented Mr. Dunn upon the valuable work he had done.

Mr. Lucas also complimented Mr. Parkin upon the able manner in which he had kept the accounts of the club.

Liverpool A.C.C.

A very successful breakdown competition was held on Monday last at headquarters, the Bee Hotel. The results were: 1, L. Mogridge, 53⅘s. Platinum points of magneto screwed together. 2, — Jenkins, 60⅕s.

Birmingham M.C.C.

On Saturday next the club will hold its second smoking concert of the season at the headquarters, the Imperial Hotel, Temple Street, at 7 p.m. Well-known artistes have been engaged. All motor cyclists will be heartily welcomed.

Sutton Coldfield A.C.

One of the most interesting and instructive lectures given under the auspices of this club took place on Saturday last.

Mr. Jas. L. Norton, A.I.M.E., filled the post of lecturer, and spoke to the members at length on the subject of tuning up a motor cycle engine.

Derby and District M.C.C.

The A.G.M. was held at headquarters, St. James's Hotel, Derby on Wednesday last week. At this, the first annual gathering, the secretary presented his report and balance-sheet, which was very satisfactory, the year's working showing a balance in hand of £1 13s. 7d

It was decided to affiliate to the A.C.U.

Oxford M.C.C.

The annual dinner will take place on Tuesday, January 24th, at the Clarendon Hotel, Oxford. Viscount Valentia, M.P., Sir Robert Buckell, and other well-known gentlemen will be present. The prizes for the past year will be presented to the winners. Tickets, 5s. each, may be obtained from the hon. sec., Mr. W. A. Mathews, 6, St. Aldates, Oxford.

Leicester and District M.C.C.

The first annual general meeting was most successfully held on Thursday last at headquarters, when the following officers were elected: Chairman and captain, Dr. C. B. Moss-Blundell; hon. sec., Mr. E. G. Fowler; hon. treasurer, Mr. H. Petty; hon. solicitor, Mr. R. A. Loseby; hon. auditor, Mr. H. Fairfield; vice-captains, Messrs. E. Laurence, J. Lawrence, and C. Bailey; committee, Messrs. J. Dignan, A. E. Daws, W Edwards, W. Glover, E. Goodin, F. C. Poecher, and G. H. Upton. A most satisfactory balance-sheet was passed, showing a good profit on the year's working. At the same meeting it was decided to affiliate to the A.C.U.

Scarborough and District M.C.

New premises comprising a clubroom and garage were formally opened on Wednesday evening last week. In celebration of the event a supper and smoking concert were held. The alterations and furnishings have all been done by the aid of voluntary subscriptions, individual members of the club having been very generous in this respect. At the supper, Mr. R. W. Ringrose (chairman of the club) presided, and there were also present, Mr. Tolfree (secretary of the Edinburgh M.C.C.), Mr. H. Frain (secretary), Mr. Wilson (assistant secretary), Mr. J. W. F. Tranmer, Mr. T. Webster, Mr. J. Whitfield, Mr. Gofton (Filey), Mr. J. E. Truefitt (captain), Mr. C. Pugh, and Mr. T. Jackson.

After supper the Chairman declared the premises open, and hoped that 1911 would be a very prosperous year for motorists. The proceedings were followed by a smoking concert.

The 1911 catalogue of Triumph motor cycles, just issued, is a most interesting and useful brochure, consisting of forty-four pages of reading matter, splendidly got up in two colours on art paper. No rider need be unacquainted with the mechanical details of his mount with such an instructive treatise for reference, for every vital part of the four Triumph models is clearly illustrated and described by lettered diagrams. Copies will be sent post free to readers mentioning this journal on application to the Triumph Cycle Co., Ltd., Coventry.

On the Road with the New Enfield.

MOTOR cyclists, actual and prospective, who inspected the chain-driven Royal Enfield motor bicycles at Olympia have probably been awaiting a description of an independent road trial at our hands. We were lucky enough last week, when calling on the Enfield Cycle Co. at Redditch, to find a two-speed chain-driven machine, which had been ridden about 2,000 miles on the road, awaiting a trial; the engine of this same machine had done 5,000, the odd 3,000 being with both belt and chain transmission and, of course, a fixed gear.

We will first briefly mention one or two alterations that have been made to the two-speed model since our Show report was published on November 24th. The method of operating the gear changing mechanism by means of chain and chain wheels has been superseded by a horizontal handle or crank and a vertical rod; this rod is coupled to the small pinion which works the push rod through a rack by means of a universal joint, and it is steadied at the top tube by a bracket; a half turn operates both gears and free engine, the latter being obtained with the handle in mid position.

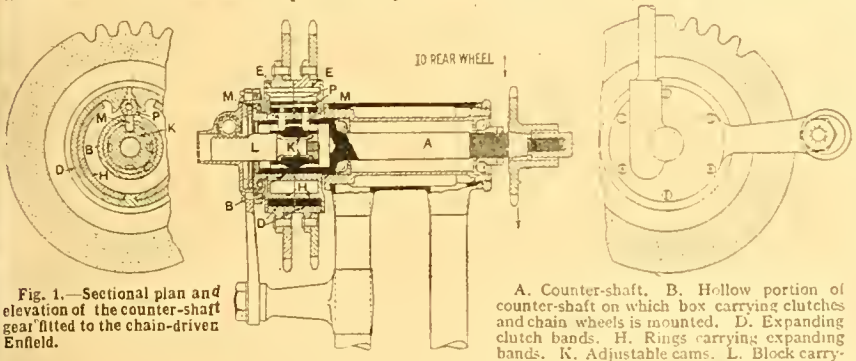


Fig. 1.—Sectional plan and elevation of the counter-shaft gear fitted to the chain-driven Enfield.

A. Counter-shaft. B. Hollow portion of counter-shaft on which box carrying clutches and chain wheels is mounted. D. Expanding clutch bands. H. Rings carrying expanding bands. K. Adjustable cams. L. Block carrying adjustable cams. M. Pegs. P. Split rollers.

The gear, which has not hitherto been described in detail, is simple, having comparatively few parts. Reference to the sectional sketches of the gear shows that it is of the chain-driven counter-shaft type with internal expanding clutches, which lock one or other of two chain wheels to the counter-shaft according to the gear ratio selected. The counter-shaft A runs in a ball-bearing made like the bottom bracket of a pedal crank axle, and is provided with an eccentric adjustment which enables the chains to be tightened as they wear. On the engine-shaft are two chain pinions of different diameters, which transmit the power to the counter-shaft, and keyed to the left side of the shaft is a box B carrying the high and low speed chain wheels, and on the right is a small chain pinion which conveys the power to the rear wheel.

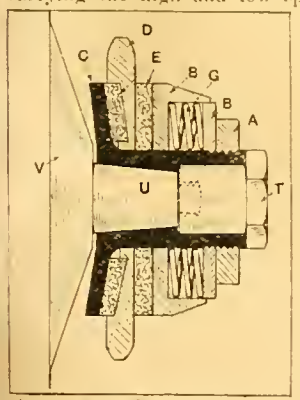


Fig. 2.—Sectional elevation of the slipping clutch on engine-shaft.

A. Adjusting nut.
BB. Steel washers.
C. Fixed flange.
D. Chain pinion.
EE. Raybestos washers.
SS Coil springs.
T. Locking nut for fixed flange.
U. Engine-shaft.
V. Crank case.

As the high and low speed chain wheels are revolved by the engine one or other is locked to the counter-shaft by expanding the rings D D into the drums E to which the chain wheels are fixed. The steel bands are carried on drums H; these are integral with the box which is keyed to the shaft.

To expand the bands cams K formed on the sliding block L force the pegs M against a split roller P which spreads the extremities of the steel bands, and causes them to grip the drums connected to the chain wheels.

The lateral movement of the block is controlled by a small pinion and a rack cut on L and operated by the before-mentioned vertical rod and handle on top tube. The cams are cut in four places on K and of different depth, so that when one face is worn a higher cam can be substituted by merely taking out K, turning it round, and replacing it in a fresh position which is not so deep.

To absorb engine shocks the engine chain pinions D fig. 2 are not rigidly connected to the crankshaft U, but are held between two Raybestos washers E E, and pressed tightly against the pinion by metal washers B B and springs G. The springs are arranged all round the washers, and exert an even pressure on the pinion. Any tendency to slip unduly can be regulated by the tension nut A; screwing it up exerts a greater pressure on the washers and springs. The whole device is carried on the flange C shown black in the sketch of the spring clutch. Having explained the mechanism of the two-speed gear and clutch, we will detail our riding experience of this new model on a winter afternoon with the roads at their worst.

Starts at a Walking Pace.

Taking out the change-speed pattern first, the easy way in which it started could not fail to impress anyone. A starting handle is fitted to the right hand of the counter-shaft, but the engine commenced to fire at a walking pace with the low gear engaged; if necessary the change-speed handle can be moved to the free engine position and a start effected from a standstill. We think, however, that most riders would find the walking mount the more simple alternative. On the road the high gear was engaged rather suddenly to test its capabilities, and the only difference experienced was that the engine revolutions slackened and the machine's speed increased, thereby showing that there is no undue strain thrown on the gear by sudden changes: it worked quite smoothly and without noise.

The smoothness of running experienced with this machine is in a great measure due to the spring clutch on the engine-shaft, which worked perfectly, and rendered retardation at corners and acceleration immediately after quite simple and easy. On up grades the machine opened out beautifully, and generally drove as if it were fitted with a belt.

After several miles of mud-plugging, during which no possible fault could be found with the machine (in fact, its behaviour on thick grease was exemplary), it was suggested we should turn off our route and tackle the ascent of Weatheroak Hill, a short but extremely steep acclivity with

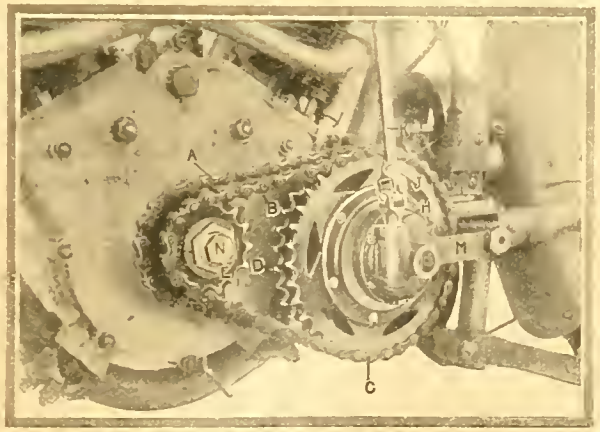


Fig. 3.—New system of controlling the Enfield counter-shaft gear.

A. High speed chain.
B. Low speed chain.
C. Low speed chain wheel.
D. High speed chain wheel.
H. Pinion-shaft for operating rack of sliding block.
J. Universal joint.
K. Operating rod.
M. Arm supporting ball thrust bearing.

On the Road with the New Enfield.—

a reputed gradient of about 1 in 5½ for a short distance. The first attempt was a failure, owing to a slight adjustment being required to the cam which operated the clutches (the gear had been in use for 2,000 miles). This delay took about five minutes, and, descending, we were able to climb the hill twice in rapid succession, about half way on the high and the remainder with the low gear in engagement. The gear ratios are, high 6¼ to 1, low 8¼ to 1.

Returning to the works, we tried the single-speed chain-driven model, and found it exactly the same as the two-speed so far as the sweetness of transmission was concerned; it is constructed in just the same manner as the other model with the exception of the change-speed gear on the counter-shaft. The weights of the two models are given by the makers as: single-speed 125 lbs., two-speed 130 lbs.

In conclusion, a few details of the equipment of the new models will not be superfluous, although they have appeared before. The twin V-type engine is 54 × 75 mm. = 344 c.c. The carburetter is a B. and B. handle-bar controlled; the magneto is a Bosch fitted with a special device by which the spark can be retarded without losing any of its intensity, front and back wheel stand, luggage carrier, etc. Comfortable foothoards are fitted to the two-speed model and pedalling gear to the single-speeder, which accounts to some extent for the similarity in the weights.

The M.C.C. Annual General Meeting.

THE annual meeting of the M.C.C. was held at the Inns of Court Hotel, Holborn, W.C., on Wednesday evening last week. Owing to the unavoidable absence of the president of the club, Mr. Charles Jarrott, the chair was filled by Mr. E. Perman. After the minutes of the 1910 annual general meeting had been read and approved, on the proposition of Mr. E. M. P. Boileau, seconded by Mr. W. Cooper, the report and accounts were adopted. Both report and balance-sheet showed the affairs of the club to be in an eminently satisfactory state. Mr. Pond then asked a question arising out of the accounts, which was answered to the satisfaction of all those present. The next business on the agenda was

The Election of Officers

for 1911. These are as follows: President, Mr. Charles Jarrott [A letter was read by Mr. Candler from Mr. Jarrott, in which the latter apologised for his absence and announced that he would give a cup for competition. (Cheers)]; vice-presidents, Messrs. S. F. Edge, A. Brown, J. van Hooydonk, E. Perman, J. A. Jackson, R. C. Davis, Harry Smith (the last two were added to the list on the proposition of Dr. C. Gibbons, seconded by Mr. E. M. P. Boileau); captain, Mr. F. J. Jenkins; hon. secretary, Mr. A. Candler; hon. treasurer, Mr. L. A. Baddeley. Mr. W. Richards was elected auditor. Mr. R. H. Head then proposed two votes of thanks, firstly, to Mr. E. B. Dickson, who had not only filled the office of captain for two years, but had also carried through several trials with great success, and, secondly, to Mr. R. C. Davis, who for so long a time had with great credit performed the duties of hon. treasurer, and was compelled to relinquish the post through ill-health. Messrs. Davis and Dickson then replied.

Mr. Jenkins, in accepting the post of captain, said he wanted the club's social events to be well patronised, and called for four members who were not on the committee to act as sub-captains and help him. At the moment, however, no volunteers were forthcoming. The next procedure was the election of the committee. Messrs. Ilsley and Bray were elected scrutineers for the voting papers. During the time the scrutineers were engaged in their duties some discussion regarding the competitions ensued.

Suggestions for Competitions.

Mr. G. E. Roberts suggested that in the Team Trial for *The Motor Cycle* Challenge Cup watches and speedometers should be barred. Mr. van Hooydonk, in reply, said he thought it would be a good plan to allow the competitors to retain their watches and speedometers, but to make the men cover a certain distance unknown to them at a given speed, a system which was most successful in the club's last speed-judging competition. Both Messrs. F. A. Hardy and G. E. Roberts supported this theory. Mr. Hardy then proposed a vote of thanks to the members of the 1910 committee for their services, which was carried unanimously. Mr. Van Hooydonk asked for suggestions for a new form of competition. Mr. Boileau suggested a trial for single-geared sidecar combinations over the stiffest course which could be found, shedding of passengers to be forbidden. (Laughter.)

Mr. B. Marians put forward the idea of holding a Reliability Trial and Hill Climb combined.

Mr. C. C. Cooke announced that Messrs. Phelon and Moore had offered a cup for a competition between the Herts County A.C. and the M.C.C.

Mr. Karslake then said he thought that a steep hill should be included in the Petrol Consumption Trial course, so as adequately to test carburetters.

Mr. Hardy suggested a holiday run extending over several days, the competing machines to be placed under lock and key at night.

The 1911 committee consists of Messrs. R. H. Head, H. G. Bell, E. B. Dickson, S. H. Fry, E. Gwynne, J. van Hooydonk, Dr. C. Gibbons, C. J. Seed, L. Vedy, B. Marians, S. May, and W. H. Wells. The proceedings then terminated.

Shortly after the conclusion of the meeting a smoking concert was held. It was exceedingly well attended, and an excellent programme was provided.

ANOTHER M.C.C. MEDAL WINNER.

E. B. Ware, who successfully drove an 8 h.p. Chater Lea and sidecar. This machine is fitted with the new Chater Lea twin engine, which gave every satisfaction. Observe the assortment of head lights.

A.C.U. ANNUAL DINNER.

Owing to the difficulty of securing accommodation at the Waldorf Hotel on a Saturday evening, the annual dinner of the Auto Cycle Union will be held there on the date originally fixed, viz., Thursday, 26th January, at 6.30 for 7 o'clock. Mr. Robert Todd, the chairman of the Union, will preside, and the speeches will be few. A most interesting musical programme has been arranged, and will include such well-known artistes as Miss Dora Thorpe (songs with 'cello), Miss Ruby Wilson, Messrs. Ernest Ward, Arthur Melrose (from the Tivoli and London Pavilion), Mr. Fred Russell (the ventriloquist from the Empire), Mr. Fred Curtis (humorist), and Mr. Patrick Playfair. Ladies are invited to this dinner, and it is requested that early application be made to the secretary, 18, Down Street, Piccadilly, W., for tickets, which are 7s. 6d. each.

Facts about Two-stroke Engines.

By B. H. DAVIES.

WE have all watched with the tenderest interest the *début* and subsequent performances of the two-stroke engine, especially as exemplified on the Scott motor bicycle. The competition records of last year and the Scott Co.'s order book are eloquent testimonies to the fact that the two-stroke engine has come to stay. But it is evident that its popularity has not yet touched the limits which might reasonably be expected. These engines run so sweetly and climb hills in such smooth, effortless fashion that few motor cyclists would have been surprised to see Scott practice forming the basis of many new models at Olympia. The fact that only a mere handful of two-stroke-engined machines figure in the 1911 Buyers' Guide may be ascribed to two distinct causes, working in unison. The first is the innate conservatism of the British temperament, which is slow to accept what is new without very complete demonstration; the second is the fact that a roadworthy two-stroke engine is not evolved in a fortnight, and few designers can claim Mr. Scott's eight years of experience. At the risk of crowding the Scott Co.'s order book to a still more gorged repletion, I propose to make a plain statement of the facts about the two-stroke engine.

A Single Weakness.

To prove the high degree of perfection already attained by the engine, I need only cite one of its achievements, namely, that it tied with the all-conquering Triumph in the competition for the champion cup awarded on the results of the four quarterly trials of last year. The two-stroke engine then suffered from a single weakness, which gave rise to several interconnected symptoms. It is obvious that an engine in which double the normal number of explosions occur is up against a very severe cooling problem; and in the 1910 model the means taken to dispose of this excessive heat were two-fold. The two-stroke engine was designed with a low compression, and it was provided with a water-cooled head for each cylinder. Frankly, these means were not adequate to cope with all conditions. They prevented a clean engine from overheating or knocking, but they permitted a heat sufficient to carbonise the grosser elements in the lubricating oil. Carbonisation, moreover, has special terrors on a two-stroke engine of the type described. The carbon deposits accumulate round the exhaust ports, which are cut in the cylinder walls near the foot of the piston stroke. In time these deposits partially choke the ports if they are not attended to, and by obstructing the free exhaust, the burnt gases are left behind, and have the same effect as raising the compression ratio, thereby producing very serious overheating. Cleanliness is, of course, a complete cure, and these ports may be scraped clean if the silencer be removed, so that obviously the defect may be ignored by any rider who is willing to clean his engine periodically.

However, a further difficulty arises in this connection. The explosive mixture for a two-stroke engine of the type described is compressed in the crank cases, and therefore two entirely separated crank cases are necessary, and each must be separately lubricated. At first the system employed was a three-way tap at the base of the pump, so that the rider had to inject a charge into one crank case, then cross over the tap and inject a charge into the other crank case. Some riders found this dual system irritating, and consequently twin valves were substituted, each of equal strength, so that the feed ought to have adjusted itself. In practice, any tiny variation in the action of the two valves or freedom in the pipes caused one cylinder to receive an excess of oil, the other a deficiency, and hence the carbonisation difficulties alluded to above were intensified. It will be noticed throughout these confessions that the design was perfectly satisfactory in the hands of a rider who was willing to clean his engine regularly, to be careful in his lubrication methods, and to inspect his crank case levels and adjust his oil valves at intervals.

The Prevention of Carbonisation.

I am in a position to explain how every user has been insured against these troubles in 1911. To commence with, the surplus heat has been efficiently disposed of. This excess of heat (as compared with the four-stroke engine) was never so great as to interfere with running efficiency so long as the engine was kept clean; it simply produced rather rapid carbonisation, and the maker's desire was to stop carbonisation, by reducing the cylinder temperature to such a point that carbonisation in any rapid or aggravated form should be impossible. Two expedients have been adopted. The first is to substitute water-cooled cylinders for the original water-cooled heads; the second to exchange a radiator of inferior efficiency for a honeycomb type of nearly double the cooling capacity. The result is that if Mr. Scott could rely on selling all his machines to experts he could now venture to raise the compression ratio of his engines by as much as twenty-five per cent. But, in dread of the non-expert, he remained content with a very slight increase, thus allowing a much larger margin in the direction of "foolproofing." The Scott engine will in future be as immune from carbonisation troubles as the standard four-stroke type. Further, the lubrication is now entrusted to a remarkably simple mechanical oiler, which will keep the oil level equally balanced in the twin crank cases, and therefore the Scott is now in a position to compete with its four-stroke rivals on its simple merits—the attraction of its pleasant hum, its smooth running, and its delightful hill-climbing style.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

An Errant Spark.

Will you kindly help me out of the following difficulty: I have a new motor cycle with Fuller plain coil. The spark takes place at the high tension terminal on coil instead of plug. The plug appears to be adjusted about right.—A.B.

All you have to do is to find out to what point the spark jumps from the high tension terminal on the coil and then insulate this point. If the coil then works properly you have no further cause to worry, but if it is still defective it should be sent to the makers to be overhauled.

A Trembler and Plain Coil.

I have a Peugeot 2¼ h.p. motor bicycle with accumulator and trembler coil. Thinking I might try dry batteries and plain coil, a friend told me I should have to re-time the engine. Is he correct, and, if so, what is the difference in mode of procedure?—E.H.H.G.

You would have to re-time the engine in a sense, but this would merely consist of adjusting the contact breaker, so that the spark takes place at approximately the same time. The difference between the two systems is that with a trembler coil the spark takes place at the moment the platinum points make contact, and with the plain coil at the moment contact is broken.

Second-hand Motor Cycles.

Kindly tell me what make of motor bicycle would fulfil the following requirements: (1.) Very quiet. (2.) Free engine. (3.) Ability to go along at, say, 20 m.p.h. even if the road is slightly uphill with engine running well in hand. (4.) Would it be possible to obtain such a machine at from £15 to £20 second-hand?—C.M.W.

There are a number of machines tallying with your specification, but we doubt if they can be bought so cheaply second-hand as the price mentioned in your letter. You may get a serviceable lightweight machine at £20, but certainly not of up to date design. If, as we imagine, you are a novice, we recommend you to employ an experienced motor cyclist to examine a machine for you before buying it.

Current Consumption.

I have a 2¾ h.p. engine on my motor cycle, and I think the coil takes more current from the accumulator than it should. Would you kindly let me know if the amount of current taken depends wholly on the coil, or partly on the contact breaker and partly on the coil? The coil is a non-trembler—T.D.

The current consumption is dependent not only on the coil itself, but on the adjustment of the contact breaker. If the points are adjusted so that they bear very firmly on one another the consumption of current will be greater than if they touch lightly. To get the coil tested for current consumption you have to place an ammeter in circuit. This should be an instrument giving a delicate reading, and it should be placed upon a table away from the machine and connected to it by long wires. If the motor is run at speed you will be able to take a reading of the consumption. Internal defects of the accumulator are not unknown.

Blurred Spectacles.

Can you tell me of any preparation that will prevent rain gathering on my spectacles, as I am short-sighted, and always have to wear glasses? I have a preparation called "Anti-mist," which has to be rubbed on the glasses and then rubbed off, but although it does prevent mistiness, caused by sudden changes of heat or cold, it does not prevent the rain gathering on them. I have also tried paraffin, but without avail.—E.R.B.

A preparation is sold, by name Glasso, by Messrs. Brown Bros., Ltd. It is a white paste, which should be applied to both sides of the glasses and then rubbed off. It effectually prevents the rain forming in drops on the glasses. Or a little glycerine (diluted with water) rubbed on the spectacles should also be effective. None of these preparations are absolute cures, and the unfortunate short-sighted motor cyclist must grin and bear it. Considerable protection, however, is afforded by using a cap with a very large peak.

SUMMER MEMORIES—Enquiring the way.

Loud Explosions.

Will you please give me the cause and cure for loud explosions which seem to take place in the silencer of my motor cycle? The explosions were almost nil three months ago, but now the trouble gets worse if anything. It occurs after I have switched off and on again and after dropping exhaust valve. It is objectionable in traffic, and I would like to overcome it.—W.H.

It is quite possible that the trouble may be due to the exhaust valve lifter wire having stretched slightly, and not allowing the valve to be raised high enough. Another tip, partially close the throttle before using the switch.

A Mechanical or Lubrication Trouble.

My 4½ h.p. twin and sidecar ran and climbed faultlessly for about fifty miles, but after a stop for tea the front plug got white hot and the engine stopped. I removed exhaust pipe and silencer, which did not make much difference. The two mechanical valves were both working as usual, and both had the full lift. The back cylinder worked quite regularly, and both cylinders fired quite regularly till the front plug got to white heat again. Engine would run a few miles down a slight gradient without getting red hot by keeping the throttle nearly closed, but as soon as I began to open throttle, I could see the plug in the dark gradually getting white hot.—T.M.

Unequal lubrication of the cylinders seems to be your trouble, which is a common complaint with old pattern twins. In any case we should recommend you to run the engine on the stand for a few minutes, and then dismount the cylinder, carefully noting if the front piston and cylinder are well smeared with oil. The cylinder heads and pistons must be clear of carbon deposit for cool running. Try also new valve springs and a plug the points of which do not project too far into the cylinder.

Selecting a Motor Bicycle.

I am thinking of getting a motor cycle, mainly for business purposes, and I am told that it is usually best to commence with a second-hand one to learn on. Is this your opinion, and, if so, about how much would a good second-hand one cost? I may say I should prefer a free engine, two-speed gear, and h.b. control. Could you advise as to any particular make of machine to go in for? I may say that the hills in my district are stiff.—S.S.

Yes, you may quite well begin on a second-hand machine, but it is really not necessary to do so. At one time a raw novice could damage a motor cycle by careless manipulation, but the control has been rendered so simple on present day machines that any tyro of average ability finds no difficulty in their management. A good second-hand machine will cost you £20 to £40, according to its specification and equipment. We regret we cannot recommend any particular make of machine.

Compression and Carbon Deposit.

Would you mind telling me how often it is necessary to grind in the valves of a motor cycle engine? It is a 1910 Premier which has run 1,350 miles. Also how often should the carbon deposits be cleaned off? The engine has not been touched, but I don't think it is quite so powerful as when new. Is it necessary to take the engine to pieces to clean it.—A.S.B.

You only grind in the valves when it is absolutely necessary, that is to say, when the machine loses compression to an appreciable extent, and loss of power may well be due to loss of compression. Usually, compression may be restored by attention to the exhaust valve only, as the inlet valve is subjected to less heat and is consequently less liable to pitting. The carbon deposit should be removed when symptoms of its accumulation render themselves evident. These symptoms are knocking on the slightest provocation, especially when the engine is under load and picking up speed on a hill. To clean off the carbon deposit it is only necessary to dismount the cylinder. You need not even remove the crank case from the frame, merely undo the cylinder connections, afterwards the nuts of the holding down bolts, and the cylinder may be lifted off by the exercise of a little ingenuity.

Conversion of Pedal Bicycle.

I am in need of a motor cycle, my home being eighty miles away and rather too far for an ordinary cycle. I have a good make of push cycle, and would ask a few questions about having it converted. (1.) Is it advisable to convert a bicycle into a motor cycle? (2.) If so, what parts would be needed, and how much would they cost? (3.) Would it be necessary to change the tyres? I should like to state that a 1½ h.p. engine would suit my requirements.—SUBSCRIBER.

No it is not advisable to convert a pedal cycle into a motor cycle, as the frame is usually too light, and breakages are likely to occur. Furthermore, a pedal cycle if ridden at motor speeds is uncomfortable, and in addition the tyres would be far too light. You would do better by purchasing a lightweight motor cycle second-hand.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"J.E.D." (Hinckley).—Two-stroke Scott motor bicycle, especially in regard to pace, hill-climbing, and reliability. Is the gear satisfactory?

"H.W.H." (Wolverhampton).—No. 7 Chater-Lea 8 h.p. J.A.P. engine and side-car.

"E.M." (Dublin).—Albion and Mabon clutches.

"E.L.S." (Southsea).—Single and twin Premier.

CANADIAN RIDERS OF BRITISH MOTOR CYCLES.

It is easy to see where the huge British exports we referred to last week are landed. Our colonies, and especially New Zealand, Australia, South Africa and Canada, receive many thousands of pounds worth of motor cycles every month. The Triumph riders in the illustration hail from Toronto and purchased their mounts through the Tangent Cycle Co. of that city.

Motor Cycles in Fiji.

The Rex Motor Mfg. Co., Ltd., Coventry, inform us that they have just received a large order for Sidettes from Fiji. It is interesting to know that motor cycling is catching on in these islands.

Orders Rolling In.

Bradbury and Co., Ltd., Oldham, are among the firms manufacturing motor cycles who find themselves exceptionally busy. Orders are rolling in at a rate far beyond expectations, and since the closing of Olympia the necessary arrangements have been made to turn out double the number of machines.

Sidecars in London.

Phelon and Moore, Ltd., have been appointed sole agents for London and district, for the well-known Montgomery sidecars, and will hold a stock of these machines at their showrooms, 12, Mortimer Street, W. This firm has also had a special model designed suitable for P. and M. machines which is sold at a moderate price.

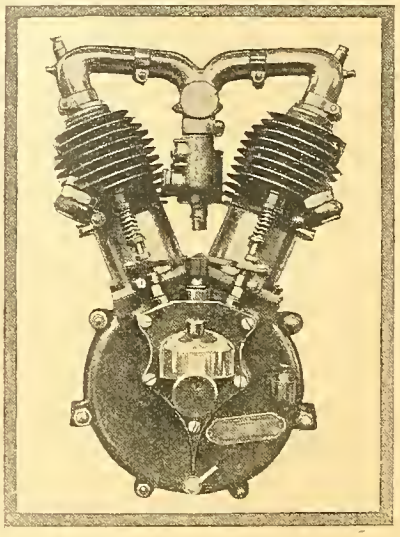
Cigarettes Up-to-date.

Motor cycle cigarettes are the latest. The other day Mr. George E. Crabbe, wholesale and retail tobacconist, 8a, White Hart Street, High Wycombe (who is incidentally an enthusiastic motor cyclist), kindly sent us a box of his motor cycle brand cigarettes, which included Premier, Rex, Triumph, and Minerva Virginian and Egyptian blend. We have much enjoyed the fragrant weeds. Riders of motor cycles can now be up to date to the fingers end!

SARLETS

Z.L. 3½ h.p. Twin-cylinder Engine.

A compact engine, powerful for its weight, is the twin-cylinder 3½ h.p. Zedel, which has a bore and stroke of 67 by 70 mm. It is claimed that this engine with Bosch high tension magneto and carburetter weighs 48 lbs.



3½ h.p. V-type twin Z.L.

It will be observed from the illustration accompanying this description that the inlet valves are automatically operated. The makers do not hide this fact, pointing out that they have proved by long experience and severe tests that the suction type of valve gives better results on a high speed engine, provided that it is properly balanced. The 3½ h.p. model is the only one manufactured with castiron crank case, but it can be supplied if desired with an aluminium case. The projection on the crank case is the covering for the bevel gear driving the magneto. The latter can be placed above the engine. A 9 h.p. Z.L. engine for racing purposes can be produced on a motor bicycle weighing complete only 110 lbs., so that it would appear easy to build up the 3½ h.p. twin into a touring frame to weigh complete about the same weight.

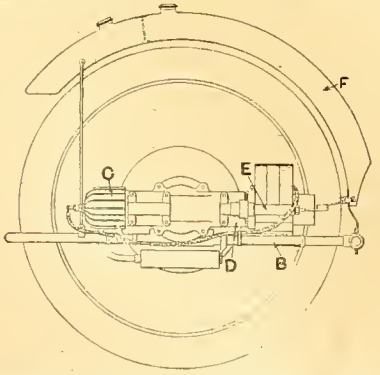
Chain Belt Improvements.

Readers will remember that a few weeks ago we published a sketch and particulars of a chain belt made by W. Pollin, of Spalding, Lincs. Mr. Pollin has been making further experiments, and has found that it very much improves the flexibility of the

belt if the chain is inserted between the two plies of leather instead of being laid along the top of the belt, as it was originally made. Our sketch is made from a section of the latest pattern belts, which Mr. Pollin has sent for our inspection.

The Latest Wall Auto-wheel.

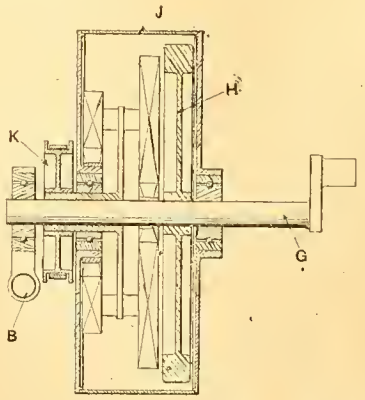
Surrounding the wheel A is a tubular framework B, which is pivoted at the front to the cycle frame. The framework B carries a two-stroke engine with the cylinder at C and compressor at D, the latter drawing in carburetted mixture through a carburetter E, receiving petrol from a tank F, which forms the mudguard. The engine crankshaft G is mounted in bearings arranged on the tubular framework, and carries a flywheel at H and planetary reducing gear of the simple type illustrated, adapted to drive the rear wheel hub J at a reduction of



speed when the brake drum K is held by means of the brake band. This brake band, by locking the planet

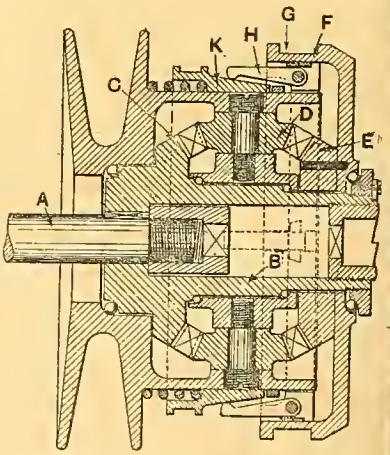
PATENTS.

pinion carrier, constitutes a simple form of clutch which enables starting from a standstill to be effected.—A. W. Wall, No. 25,861, 1909.



A Pulley Two-speed Gear.

The engine crank spindle A has bolted to it a sleeve B, which carries a driving bevel pinion C. This meshes with planet pinions D attached to a sleeve carried by the belt pulley and the planet pinions engage a driven pinion E, fixed to a drum F, the various pulleys being mounted on ball bearings as illustrated. The drum F is engaged externally at G by a brake band and internally by an expanding clutch, which is actuated by moving the levers H about their pivots as the cone K is moved to the right by means of the spring. When this takes place the clutch locks the drum F to the belt pulley, and a solid or direct drive is obtained. When the clutch is disengaged, and the band brake applied the pinion E is held stationary so that



the belt pulley is driven through the gears C D at a reduced speed.—W. L. Poole, No. 29,510, 1909.

THE MOTOR CYCLE

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The Quarterly Trials.

As may be readily imagined, our leaderette last week detailing the action of the Traders' Union with regard to the Quarterly Trials caused a considerable stir among those who are particularly interested in these events, and the future of such competitions was freely discussed among motor cyclists and the trade. Our opinion, that these trials are of service if held under unfavourable weather conditions such as obtain at this period, has been confirmed by the thirty-two trade entries received before the date for the closing of entries at ordinary fees. The situation now is that the majority of the members of the Traders' Union will *not* support next Saturday's Quarterly Trials, and they include practically all the most important and largest firms in the industry. There remains a minority of makers who have taken up the manufacture of motor cycles in more recent years, and who are anxious to give their support at least to next Saturday's event, but they may or may not persevere with the remaining fixtures in April, June, and October.

We understand that in more than one instance traders were willing to compete, but decided to abide by the decision of the majority.

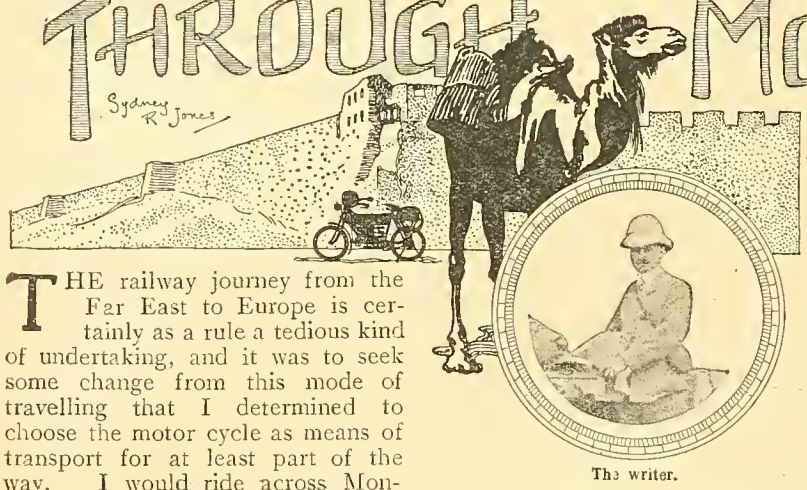
The Traders' Union is of opinion that no good purpose is served by these trials, and that motor cycles have proved their reliability in consecutive daily runs of more than 130 miles.

That a motor cycle is now reliable is an accepted fact, but that does not necessarily mean that it is *perfect;* and in formulating the rules for the Quarterly Trials, so that the change-speed gear may be improved by encouraging it in these events, the A.C.U. has certainly made a step in the right direction. Particularly does this rule apply to a winter trial, when the road surfaces are heavy and greasy.

On dry roads exceptionally steep hills with sharp corners can be ridden in safety, but the same acclivities become risky, if not dangerous, under winter conditions, because to climb them with single-geared machines they have to be rushed. If under such circumstances single-geared machines fail while variably-geared ones succeed, it does not prove that the former are unreliable, but it points to the fact that the latter are nearer perfection, which is the consummation we are all striving to attain. That is one reason why we specially favour these particular trials being held in the winter; the perfect motor cycle will be an all weather mount.

A point which may have been overlooked in the conduct of these trials in the past is that it has been the practice of many makers to enter the same machine time after time, whereas if it were made compulsory to compete each time with a different mount, it would cause manufacturers to test publicly improvements which are made periodically in almost every important manufactory. In such manner the public would be able to gauge the advantages or otherwise of any alterations in detail as they were introduced. The trade should also not lose sight of the advertisement to be gained this year in particular by holding the trials in different parts of the country where there are still numbers of prospective motor cyclists waiting for ocular proof and a little further demonstration before making the final plunge. The sight of a number of riders adhering to schedule times and climbing all hills *en route* without mechanical trouble is often a great inducement to waverers, and creates a most favourable impression.

THROUGH MONGOLIA



PEKIN TO LAKE BAIKAL BY MOTOR CYCLE

BY PROFESSOR ERIK J. NYSTROM

The writer.

THE railway journey from the Far East to Europe is certainly as a rule a tedious kind of undertaking, and it was to seek some change from this mode of travelling that I determined to choose the motor cycle as means of transport for at least part of the way. I would ride across Mongolia to Lake Baikal, and if time permitted continue right home on the same mount. I had only four months for the whole European journey, so it was from the beginning questionable whether the whole overland journey would be accomplished.

My machine is a four-cylinder F.N. (1909), on which I had covered in China 300 miles (I thought this was a fair trial, but was grievously mistaken), fitted by Chinese carpenters with the following fixtures: (1) A wooden board was fixed with iron frames and screws on the handle-bars, (2) a pack-saddle of extra hard wood was placed across the middle over the toolbags, and (3) a large board carrying a Chinese pigskin box was screwed on the luggage carrier at the back. All these boards had their surfaces pierced with numerous holes, so that I could strap or tie all kinds of odds and ends firmly on to them. On the front boards over the handle-bars I carried bedding and tent; on the pack saddle two leather bags with carbide, spare parts, waterproof coat, and knee-protectors; and on the other side a leather valise with photographic utensils, toilet things, reserve provisions, etc. On the back carrier came petrol, oil, blow lamp, medicine box, spare parts, and tools. Altogether the luggage weighed over 100 lbs., but I had to throw away a good deal later, as it was certainly too heavy.

Establishment of Petrol Depots.

My first step was the establishment of depots of petrol and provisions on the road from Kalgan across the desert to Urga, a distance of about 700 miles. For this job—which was no joke—I chose a young Chinese boy who had been in my employ some years. Upon asking him, and pointing out the nature of the undertaking, he at once and most cheerfully agreed to go.

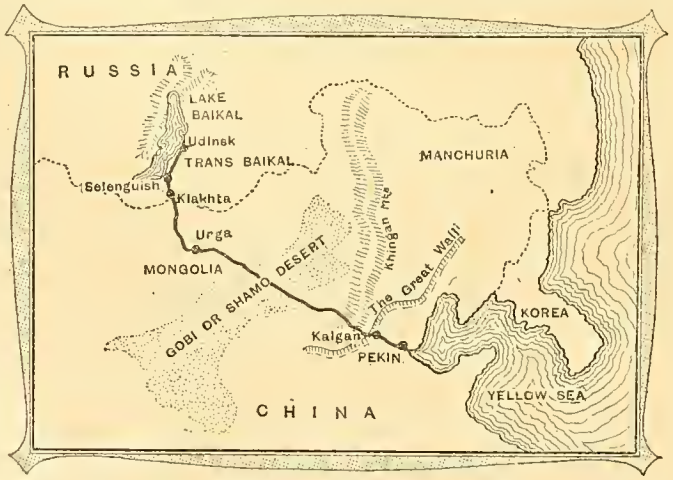
This boy—named Chi-Chang-Fu—would endeavour to hire in Kalgan two camels, and also engage a Mongol interpreter, and this little caravan would thereupon travel across the Gobi desert following the telegraph. At suitable distances they would deposit petrol and provisions, either at the three telegraph stations or in Mongol tents by the road. They would give the Mongols red flags to hoist above the tents, and also mark the name of the place, and especially the number on the telegraph pole which was nearest. On this point I laid great stress. Chi-Chang-Fu would, upon completion of this job, telegraph to me from Urga, and then return post-haste to meet me in Kalgan with all information regarding the depots and the road itself.

The road from Pekin to Baikal can be divided from a motoring point of view into three parts: (1) Climbing by an atrocious road up a steep rocky valley on to the Mongolian tableland. (2) Then fairly good level country from above Kalgan to near Urga. (3) Hilly country north of Urga, bad sands, and morasses, before reaching Baikal.

Colonel Anderson, of the British Legation Guards, gave me valuable assistance and saw me off; Colonel C. D. Bruce, Superintendent of Police, Shanghai, lent me a splendid map (British Intelligence Department) of Mongolia. My stores and eatables were all-British, such as Bovril (used every day) and Lazenby's soup tablets.

After a busy time, greatly assisted by kind friends in Pekin, and a short trial trip in the morning, I set out from the Wagon-Lit Hotel in Pekin at 2.30 p.m. on June 2nd, 1910. A small crowd cheered when the machine willingly started with its heavy burden. On the good macadamised roads in Pekin I began to experience early the curse of the heavy luggage, which would have tempted a saint to use sulphurous language. Things began to drop off, but this was only a beginning. Worse was to follow.

The heat that afternoon on the Pekin plain was at its worst. I made slow progress, often mistaking the road to-



Map of route followed by the author on his long journey from Pekin to Lake Baikal *via* Kalgan and Urga.

Through Mongolia.—

wards north-west, and landed finally in the dark in a ditch with the back wheel self-locked. Not being in good form, I gave up the job of lifting 3 cwts. out of the ditch, and set out on foot to call villagers to help. With the aid of my acetylene lamp, these kindly villagers afterwards dragged the cycle over a fearful road to the Railway Hotel in Nan-Kow, only thirty miles from Pekin. Not a very successful beginning! And thoroughly exhausted did I feel after it.

Ascent to the Great Wall.

Nan-Kow means the southern mouth, and is the opening of the valley that leads up to the point where the Great Wall crosses over at Pa-Ta-Ling.

Numerous old towers, walls, and other fortifications bear testimony to the Chinaman's dread of invasion from the Tartar and Mongol hordes. This is the old high road to Mongolia. A railway has now been built along the old road from Pekin to Kalgan.

I tried first to ride by the side of this railway, but innumerable bridges and tunnels soon frustrated the attempt. I had then to hire three coolies, who dragged the machine with ropes. The road is not a road—it is a staircase. Yet sometimes it loses all regularity and becomes more like a stone quarry.

Over huge boulders and in deep ruts poor "Fanny" (the F.N.) had to bump her way forward, the frame standing the test well, but the tyres showed unpleasant signs of wear on the sides.

The sun set when I was just below the high ridge where the Great Wall runs across. I pitched my little canvas tent, which was made so as to cover "Fanny" and myself, but as ill luck would have it, a furious thunderstorm broke over us in the night. The lightning was terrible, looking intensely violet, and the peals of thunder echoed thousandfold between the hills. Having camped in a valley or gorge, I expected every minute the dreaded shan-shin or mountain torrent to sweep down on me, this being a peculiar Chinese phenomenon when the water comes down like a wall. Later the gale rose to a hurricane, and blew both the machine and tent over. I had to recover money and other belongings by "minings" in the sand.

Feeling very sad and shaky, I proceeded to cross over the pass and through the Old Wall, which is here in good repair. Some American tourists photographed me, and on learning of my plan kindly offered the remark that "You must have the heart of a lion!" But I felt very far from a lion just then after such a terrible night.

The road after crossing the Pa-Ta-Ling, however, showed some improvement, and I could mount the machine occasionally, and also use the path alongside the railway. The latter alternative had, however, its drawbacks.

Sometimes the path on the side of the ballast got so narrow that innumerable falls were the result. Occasionally, just when enjoying a good spin, I would encounter a bridge, and had to cross this unaided by lifting the cycle—3 cwts.—on the line itself. Walking on the sleepers, with the yawning abyss between and on both sides, and a high wind making the whole cycle and myself sway, was decidedly exciting. People do not waste time and money on hand-rails, planks, or gangways in Chinese railway building, and I used to detest these black stones which marked a bridge in the distance.

Another very uncomfortable experience was that the petrol consumption was proving abnormally high.

(1) The start from Pekin in the presence of Col. Abbott Anderson, Commander British Legation Guard.

(2) Attempt to travel on the Pekin-Kalgan Railway. Dangerous crossing of a bridge near Nankow.

(3) In the Kalgan Hotel. The Dutch Consul at Tientsin (on left) with the writer and Chinese owners of hotel. (4) Famous gate at Chu-Yung-Kuan with inscriptions in several languages.

Through Mongolia.—

I noticed this, and calculated with extreme misgivings that under the circumstances my petrol depots in the desert, which were reckoned at least doubly sufficient, would hardly carry me through. I thought this consumption was caused by heavy luggage, which was probably partly true, but after arriving in Kalgan I found the other reason to be a clogged carburetter gauze. It will be seen, however, that the petrol consumption still continued to be very heavy.

The country gets very sterile and sandy near Hsiian-Hua-Fu, the sand from the desert actually blowing in huge waves over the city wall, forty feet high. Riding against a terrible head wind, without daring to use the goggles on the risky, narrow path high up on the railway embankment, is not pleasurable.

Blue and brown all over my body, and bruised as I was by many falls, I arrived at Kalgan on June 6th at 9 p.m. The cyclometer, which in Pekin had stood at 320 miles, now showed 451. The hotel at Kalgan is not unlike an Italian ostina, with huge vines growing over the whole courtyard. Naturally, I did justice to the refreshments and food to be had there.

I was very pleased to meet in Kalgan my servant, Chi-Chang-Fu, who had arrived only a few days before. He had accomplished his difficult task with accuracy and dispatch, and presented me with a complete list of names and places where he had deposited petrol and stores in the desert. His Mongol interpreter gave me some useful sentences in his own language, which I wrote down.

The Europeans in Kalgan did their utmost to render useful assistance, especially Mr. Brisher, of the British-American Tobacco Co., who was indefatigable in his efforts to meet my numerous demands.

A local fitter from the railway engine shops worked for a day on the F.N., the innumerable falls from the railway embankment necessitating various repairs, such as straightening pedal spindles and handle-bars which were bent, fixing with bolts the luggage carrier at the back, and so on. I myself took the carburetter to pieces. The heavy petrol consumption was a cause of grave anxiety to me, as it meant that there would be scarcity during the desert journey. I discovered that only a few pinholes were left in the carburetter air inlet gauze. This cleaned, I hoped that less petrol would be used, and in this I was to some extent correct, although the consumption was nearly double the quantity I had originally calculated.

At the gate in the real old Chinese wall at Kalgan, the entrance into Mongolia.

Halt in a village near Chu-Yung-Kuan. Note the amount of luggage.

A branch of the great Chinese wall at Pa-Ta-Ling.

Boulder strewn road near Chu-Yung-Kuan ascending the Nankow Pass.

The Chinaman Chi-Chang-Foo at Hanor Ba, North of Kalgan.

The Start Across the Desert.

After spending two days in Kalgan I set out on the serious part of the journey—across the desert. It was like a ship leaving the safe harbour to sail over the boundless ocean. Chi-Chang-Fu accompanied me up the Hanor-Ba, a very nasty rocky slope above Kalgan, the last staircase up on to the Mongolian tableland. I hired some men, and we all worked hard pulling the heavily laden machine up the awful slope. I admit I was nearly exhausted at the top, and could only steer the machine badly when I began to use it under engine power. The real old Great Wall passes

Through Mongolia.—

here, a rampart built of stone brown with age; in places it is so dilapidated that a horse can be ridden across. Before parting from my faithful servant I photographed him with the motor cycle and the wall in the background.

I was now alone, with the next place of comparative comfort and civilisation—Urga—nearly 800 miles off. And a sorry start I had; the road was stony, and I was so tired I could not control my machine. Falls ensued, bruises, blue marks, bent pedals. These proceedings went on practically the remaining part of that day, and in the evening, as a change, I ran into deep sand, than which nothing is more cruel for a motor cyclist. I was nearly dead with fatigue when I ended that night in a kindly Chinese settler's home.

I admit frankly that next morning found me very much depressed and down in the mouth. The previous day's experiences were not encouraging, and how could I know that I should not have 700 miles of the same sufferings in front of me.

But, as I found very often to be the case on this journey, when the clouds were most dark, the sun suddenly peeped through. This day—the 10th of June—I did some very nice spins on fairly good roads, and no sand was encountered. The green fields of the Chinese emigrants were left behind, and a green prairie broken by low ridges took their place. The country—although absolutely treeless—looked rather nice with plenty of green grass and wild flowers. But already a terrible lack of humanity made the land look desolate.

Poor "Fanny," with her enormous load, did not like the ridges either, and failed very badly on the slopes. I can't say that I particularly enjoyed the heavy drudgery of pushing her up the heaviest inclines, so to improve matters I loosened the exhaust pipes and placed them outside the silencer. The increase in power was remarkable, but the sound of the exhaust was like a Maxim gun now.

Sometimes I met caravans of camels loaded with merchandise and guided by Mongols in bright red or yellow garments. The roar of the exhaust made the camels dance about very friskily. The Mongols were interested, and some tried to race me, but in vain.

I was now approaching telegraph pole No. 1,538, and was anxious to know how the Mongols had treated my petrol depot, which should be in a tent near by at a place named Bong-Hing. I found everything O.K.—red flag hoisted and petrol can inside. So far the Mongols had turned up trumps, but, of course, I could not know how things would pan out further north. *(To be continued next week.)*

Improving Old Pattern Machines.

By AURIGA.

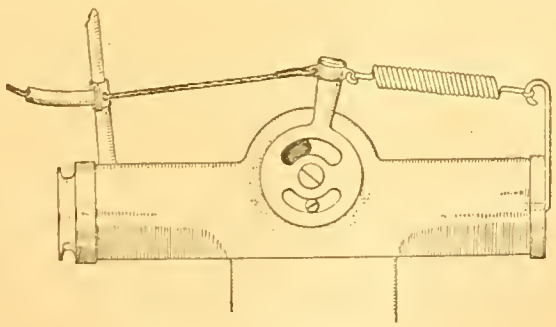
THERE must be many among those who visited the Motor Cycle Show at Olympia who, with every desire to keep themselves up-to-date in respect of their mounts, are yet compelled by their means (or the lack of them) simply to look at and long for one of the many excellent machines that were shown. These men are saved much hard thinking, for the selection of a mount, unless one has already a favourite make, is a matter for much consideration among so much that is good. But there are many ways in which the man of rather less than moderate means can improve his trusty steed, and I propose to outline briefly a few of them.

These may be roughly divided into the following heads:

(1.) Improvements to carburetter.
(2.) Improvements to engine.
(3.) Improvements in lubrication.
(4.) Improvements in transmission.
(5.) Improvements to cycle work.

Modernising the Carburetter.

By this I mean rather carburetter control than carburetter adjustment, which is too large a subject for the present article. It is a simple matter to fit handle-bar control to an old pattern carburetter; special fittings are made by Bowden Wires, Ltd., for most standard carburetters which are easily attached in a few minutes by anyone with a taste for mechanical work, and in cases where the complete sets of fittings are not made it is generally an easy matter to fit the stop for the Bowden wire on some part of the machine, whence the movement can be made by means of the Bowden sliding tubes containing the take-off spring if space admits, or in other cases a spring can be fitted to some convenient place on the side remote from the wire. The accompanying sketch will show how this was done in the case of a Royal Enfield lightweight. On this machine the extra air lever can be left alone in most circumstances with quite satisfactory results, but the rider who desires the utmost efficiency will not be satisfied with this, and it is not always convenient to reach down to move the lever on the last bit of a bad hill



Home-rigged control of the extra air supply.

when there is traffic about. On a Raleigh two-speed motor cycle, which I rode a few years ago, I connected the extra air lever to the advance spark lever on the tank, allowing to each a certain amount of individual movement, with very satisfactory results.

Engine Improvements.

These must of necessity be somewhat in the nature of repairs. If there is too much play between the exhaust valve stem and its tappet there will be loss of power and unnecessary noise. In the absence of adjustable tappets this can be remedied by putting a small piece of sheet steel, cut to shape, over the end

Improving Old Pattern Machines.—

of the tappet, having three projections turned down round the tappet to keep it in place. In some cases "domes of silence" of a suitable size might be used, but it would probably be necessary to hammer them flat. A cap to keep dust and dirt out of the compression tap (as is fitted on several machines) might be made in much the same way. For this purpose copper or brass will be suitable, and it can be tinned with Galvanit powder.

Lubrication.

Lubrication can be made semi-automatic by means of one of Best and Lloyd's pumps. The rider probably knows already how many miles he can run to a pumpful of oil. This pump is filled in the usual way through a non-return valve, but the plunger is returned slowly by means of an internal spring, and can be adjusted by a needle valve to discharge its contents into the engine in the required time; then all the rider need do is to raise the plunger from time to time. For fast running, the valve should be slightly opened, and when the machine is at rest, the tap should be closed. If any obstruction should lodge in the valve, the rider will notice that the plunger is not falling; he can then open the valve and the pump in the ordinary way. While on the subject of lubrication, it should be mentioned every engine is not best suited by the same oil. On taking to one brand, after using an equally good and excellent oil, I find the improvement in running most marked. Riders would do well to experiment.

Transmission.

I do not propose to discuss the merits of chain and belt in this article, for the reader will probably retain whichever he has; but it will at once occur to anyone that the transmission may be greatly improved by the addition of variable gears and pulleys. Of the latter there are a great many on the market suitable for heavy and medium weight machines, and Motosacoche, Ltd., supply one for lightweights.

The Fit-all two-speed gear, now made by Messrs. Lake and Elliot, can, it is claimed, be fitted without any structural alterations, though it is usually necessary to set the pedal crank out a little. The same remarks apply to the N.S.U. engine-shaft gear. The Millennium two-speed free engine hub can be built into the back wheel of most standard machines, with forks about 6½in. wide. This gear admits of pedal starting. In the case of lightweights up to 3 h.p., the new Armstrong Triplex three-speed hub should be a good thing. This has a direct drive on the middle speed, giving a gear ratio of about 7 to 1, the top and bottom being respectively 5 to 1 and 10 to 1—a very good combination. The gears can be changed with the utmost smoothness, as a multiple plate clutch is incorporated in the hub, which is very neat and complete. The clutch is worked with a rocking lever by the right foot, and the gear manipulated by a lever on the tank. Riders who cannot afford a variable gear will find a clutch such as the Mabon add greatly to the convenience of their mounts. The cleanliness of the machine can be greatly improved by the addition of Bluemel celluloid side pieces to the mudguards. Something similar should be fitted to every machine, as nearly all can be improved by a leather mud-flap, which, if sufficiently wide and deep, keeps all splashes from the feet and engine. The tyres should be carefully inspected, and all cuts filled with tyre stopping, such as could be seen on many of the accessory stands; or, better still, a non-skid band fitted.

For those who want to obtain the utmost efficiency under all conditions, there is a little contrivance sold by Messrs. A. H. Hunt and Co., which will enable the rider to alter the timing of his magneto to suit varying conditions with the aid of the fingers alone and in a few seconds. New settings can be made without fear of upsetting the original timing, as the instrument is fitted with a Vernier scale, so that the magneto timing can be advanced or retarded in a moment and as easily put back into its original position.

RE-ORGANISATION OF THE REX WORKS.

MANY readers may have wondered why they have not obtained delivery of 1911 pattern Rex motor cycles ordered at the Show. The reason is that Mr. W. Williamson, the managing director of the company, has been busy before and since the date of the Show in re-organising the works and arranging for an increased output. Several alterations have been made in the design of the engines which have entailed a greatly increased number of parts. For one thing, the change in the position of the magneto, and the alteration from chain to gear transmission has more than trebled the number of gear wheels used. This has necessitated laying down a number of gear cutting machines, and more are on order which will be installed very shortly. In addition, the whole of the works has been sub-divided into sections and arranged in such a manner that the production of the machines is progressive from the time the raw material enters the factory until it emerges in the form of the finished article and is packed for delivery.

The viewing is now very complete, and no parts are allowed to enter the finished stores until they have passed the examiners, who test each machined portion of the engine, gear, and free engine hub with special gauges. Mr. Williamson told us he had experienced some difficulty in getting the internal cones of the free engine hub properly ground, but by the establishment of the firm's own grinding plant this trouble has now been overcome, with the result that the clutch works far more smoothly and can be slipped for some considerable time without detriment. Oil has been found unsuitable for this particular clutch, and grease has been substituted with excellent results.

Arrangements are also being made for an extension of the premises at Easter, when some old parts of the works will be dismantled and the addition of a new wing will make for general cleanliness and improved lighting.

In our tour round the various shops we noticed an alteration to the Rex footboards. The new patterns are made with a wood foundation covered with a sheet of aluminium, on which are formed studs to give a firm hold for the feet. They supersede the metal ones with pedal rubbers which were exhibited at Olympia.

Finally, the firm has installed an electric lighting plant, and just before we left we were able to see the whole of the factory illuminated in a most efficient manner by the new system.

OCCASIONAL COMMENT

By "IXION"

A Sensational Accusation.

I feel a little nervous for having derided the idea that the newer magneto positions affect the steering; for last week I wandered into one of the best known factories, and saw there an experimental frame, with the rear end of its top tube curved downwards to permit a lower saddle position.

"Hello," quoth I, "you have given up making a fetish of that straight top tube?" "We've tried the dropped top tube," said the engineer, significantly, "and we find the curved frame wags its tail on grease!" This gives me furiously to think. The frame cannot be inferior to the old type in longitudinal rigidity; the wheelbase length need not be interfered with; and why-ever should a lower saddle position *per se* tend to decrease the factor of stability on greasy roads? I am inclined to fancy that I was not given the true reason for this firm's adherence to the straight top tube. But it would be interesting to hear riders' experiences.

Personally, I rode 3½ h.p. machines of both types last year, as also the year before, and failed to notice that either showed any superior stability on grease. But as a number of the newer firms are gleefully adopting the curved top tube, any inherent deficiency had best be exposed as soon as possible. If the designer in question was speaking sincerely, I fancy the general proportions of his frame, especially the wheelbase and steering angle, must have undergone modification in the alteration of the top tube lines.

Sportsman or Potterer?

I read Dr. Patterson's amusing criticisms of my article with interest and enjoyment, but I fancy that he, in company with many others, fails to realise how cleverly the A.C.U. is catering for both the "sportsman" and the "potterer." Some critics assert the A.C.U. and other hill-climbs are acrobatic performances, and are calculated to infuse cold chills into the marrows of the private rider. Quite so. The only large class of amateurs who enter competitions are of the sportsman type, and crave these thrills. Thus the freak hill-climbs obviously cater for the sporting riders. Moreover, they also cater for the potterers.

The sheer arduousness of a sprint up Amulree or Willersey against the watch tends to develop a type of machine which can climb these hills with a duffer in the saddle, for few firms can rely on the services of a Newsome or a Barnes or a Lee Evans.

Again, the A.C.U. has taken the bold and unpopular step of limiting its quarterly trial gold medals to machines provided with free engines and variable gears. When I say "unpopular," I am thinking of the noisy advertising type of rider who fills the bulk of the correspondence columns, and lifts his voice at meetings, and "grouses" at the start or finish of a trial. The vast majority of motor cyclists want these fitments, and the average club competition programme, inspired by the A.C.U. example, is most cleverly catering for both types at one and the same time.

I wonder what will happen to competitions in a year or two, when every machine is sickeningly reliable, and can climb any hill under any circumstances? I suppose our trials will be relegated to speed work on the track.

Cleaning the Motor Bicycle.

Our friend "Rex" is evidently a man of leisure. The average hard riding motor cyclist has no time to spend on polishing up every tortuous nick with Selvyt and a tin of fluid. Here is a tip for the busy rider who wants his machine to look tolerably presentable when the parting of the ways arrives, and a greedy army of answers to a prepaid advertisement shower cheques upon his doorstep.

When you receive your new machine, coat all metal parts with vaseline or Rangoon jelly, and never clean it at all till the day comes for the dispatch of the fateful three lines to the advertisement bureau. Then mop it over with any old rag, and the deep strata of filth will slide off with the grease, leaving the enamel and plate glittering immaculate beneath. To obtain an even coating for the grease, which is apt to present a smeary appearance if applied in the ordinary way, mix a little petrol with it, and apply about the consistency of paint. As the petrol dries out it will leave a perfectly even coating of grease, which is not at all unsightly.

A SILVER LINING.
A photographic impression, the end of a wet day in Cheshire.

Is the Modern Motor Bicycle Perfect?

By B. H. DAVIES.

ONE of my articles on machines at the Show provoked an amusingly pessimistic letter from Mr. R. Wentworth Cook, who took exception to my describing the machines of to-day as sufficiently perfect for all practical purposes.

This correspondent reminds me of the matrimonial idealist who decided to wait until the breed of women had materially improved before taking to himself a wife. He died a bachelor; and if Mr. Cook waits for absolute final perfection in the motor cycle the sniff of somebody else's exhaust will be his sole experience of petrolic joys.

Perhaps at some future date under the Socialist Utopia we shall all be presented with 5 h.p. twins by the State, which will also indemnify us for all fines and licence fees, mend our punctures, foot our petrol bill, and so forth. The practical question is whether it is better to await the materialisation of such ideals or to make the best of the state of things actually existing, when a motor cyclist must pay his own expenses and be content with the snail-like 50 m.p.h. which are all he can coax out of a good 1911 3½ h.p. mount.

1907 and 1911 Engines—A Comparison.

Mr. Cook's letter contained an innuendo which may be taken seriously by the inexperienced and must therefore be exposed. He implied that the 1911 engines were practically identical with the engines of 1907, because the broad outlines of design have undergone little serious modification. I propose, therefore, to mention a few of the improvements which have equipped the average 1911 engine with an efficiency exceeding that of 1907 by as much as 50 per cent. in extreme instances, and by probably 25 per cent. in the patterns which were most advanced in 1907.

In 1907 plain phosphor bronze crankshaft bearing bushes were standard; to-day ball bearing crankshafts are normal, and provide increased speed, power, and flexibility.

In 1907 flywheels were turned from cast iron; to-day the rims are composed of a weighty alloy with excellent results.

In 1907 the average distribution gear consisted of a cam and a pinion and a spindle, keyed, pinned, or otherwise compounded of four or five separate pieces; to-day it is the rule to turn cam, pinion, and spindle in one solid piece, with a great gain in reliability.

In 1907 the metallurgic aspect of motor cycle engineering was in its infancy. Especially were such parts as piston rings and valves constructed of unsuitable metals, with the result that compression rapidly became impaired in use. To-day most engineers are aware of much better grades of metal for these parts.

In 1907 much doubt existed as to the proper correlation of bore and stroke, valve area, compression ratio, valve lift, and timing. To-day the average engine is much better designed in these respects, and again greater speed, power, and flexibility are attained.

Machine Improvements.

The pinions possessed rather coarse teeth, and really delicate timing was often impossible. Further, the cam design was faulty, so that though an adequate valve lift was attained, the period of maximum opening was too small. To-day an increased number of teeth per pinion permits of more accurate timing, the friction and resistance have been reduced by compound leverage, and the cam design has been improved so that the period of maximum opening is appreciably prolonged.

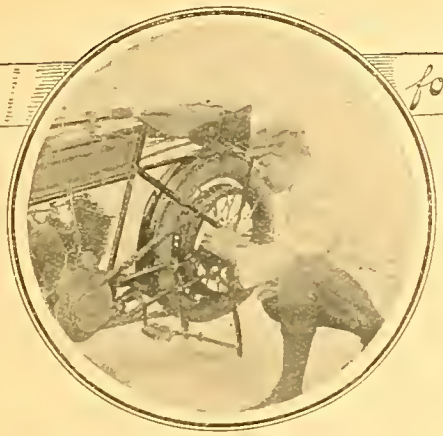
I need not enlarge upon the many detail improvements in the fittings of the machine itself—the delicacy of carburetter control, obtained by substituting handle-bar control and pistons or slides for the old butterfly throttle, leaky sliding air ring and ratchet tank levers; the ball bearing high-tension magneto, as contrasted with the old coil and accumulator, or low-tension magneto; the belt rim shoe brake, which has practically ousted all others; the improvements in spring forks; the lower riding position; the free engines and variable gears; the larger tank stoppers; the oil and petrol gauges; the reduced weights; the comfortable saddles; the convenient tool and luggage bags; the improved stands and carriers; the more easily removable wheels; the modern acetylene lamp and generator; the vast increase in the reliability and convenience of every single item which goes to make up the complicated anatomy of the motor bicycle of to-day.

It is as idle as it is ridiculous to pretend that motor bicycles have undergone little or no improvement since 1907. And while we make these claims, we may be as clamorous and as hopeful as Mr. Cook for a glut of even more revolutionary modifications and innovations within the near future.

WHERE A LITTLE KNOWLEDGE IS DANGEROUS.

Riders of brief experience who wish to execute sundry repairs and adjustments to their motor cycles should proceed cautiously and first obtain the exact instructions before commencing operations, or they may find themselves in the position of a reader who applied to us for advice regarding a mysterious noise in the engine. It appears that he was advised by a friend to grind in the valve, but not receiving explicit details as to how this operation should be performed, he mixed some emery powder and oil, and *put it in the cylinder* with the idea that it would assist to grind the rings as well and restore lost compression. To the mechanical mind it seems hard to believe that anyone could be guilty of such ignorance. He has now scored the cylinder badly and a new one is required. It seems almost needless to add that no foreign matter of any kind should ever be put in the cylinder, and it may be added that not enough care is taken by the average experienced rider when grinding valves to prevent any of the abrasive compound from entering the cylinder. A rag should be placed in the port before commencing to grind.

Hints & Tips for Motor Cyclists.



FINDING PUNCTURES.

353. It is a great mistake to detach the whole bead of the cover and withdraw the entire tube whenever a tyre deflates on the road, yet many a rider makes this his habit. By daylight trust to the eye, and, sitting down near the rear wheel, go carefully over the whole of the tread until the cause of the puncture is found. Then detach the bead for about nine inches on each side of the puncture and repair.

This restricted method is especially valuable in rain. It is usually possible to keep the tyre and tube perfectly dry by spreading a cape or mackintosh jacket across the carrier and one's head to act as a tent. If the whole tube is withdrawn, the tube, the solution, and the French chalk are all likely to be soaked, and the repair will probably fail.

If nothing can be found sticking in the cover the valve should be suspected before the cover is detached. The valve is easily tested, of course, by moistening its extremity and watching for bubbles.

A small puncture at night appears a more formidable matter, but the pin or bit of wire can generally be felt if the hand is passed lightly round the tyre, not forgetting to feel the walls as well as the tread. A portion of the tube then being exposed, the exact situation of the hole is easily found by ear if the tyre be blown up as hard as prudent and the ear laid against the tube. If no hissing is audible the tube should be stretched and held close to the ear.

In the rare event of a hopeless burst miles from any tyre stockist, one expedient is to stuff the cover tightly with grass, and proceed to the nearest hotel or station at a strictly moderate pace.

SAFEGUARDS ON GREASE

354. Occasionally the nervous tourist who never rides in wet weather near home may find himself compelled to traverse many miles of really dangerous grease when he is holiday-making on tour. If his tyres are worn down till the non-skidding portions are useless he not infrequently becomes so nervous after one or two skids that he is actually afraid to proceed at all. He should remember three facts. The first is that he is considerably more likely to skid if he crawls along at a snail's pace with his feet dangling. Skids are quite uncommon at a moderate speed of, say, fifteen to twenty miles per hour on a straight road, because the engine is then turning smoothly, and the machine can be steered straight without waggling.

Secondly, it will assist considerably by screwing out the adjustable pulley as far as it will go and adjusting the belt to suit. Machines with engines geared low are far less likely to skid because of the smooth, even pull. The belt should be fairly slack. Therefore on a wet day in Devon, or Somerset, or Derbyshire gear down to 6½ to 1.

Thirdly, he should instantly blow up his tyres board hard, and keep on the crown of the road as far as possible, dismounting whenever a cart threatens to edge him into the gutter if he feels nervous. A skid at moderate speeds seldom hurts anyone, provided no other vehicle runs over the recumbent rider.

IN CASE OF FAILURE ON A BAD HILL.

355. Some duffers who ride clutchless and fixed gear machines behave very foolishly when their machines fail to climb a bad hill on tour. Riders have been known to do themselves an injury by a series of hopeless attempts to restart, none of which carry them more than a few yards. The first essential is to cool the engine down thoroughly, the failure being partially due to a hot and tired engine. The second is to realise that a little more dash expended in a second attempt is likely to produce success. It is generally a single stiff knuckle or bad bend which causes failure on a hill. Therefore after cooling the engine and, if possible, dropping the gear, proceed down to the foot again, and see that all the compression joints are tight. Put a spanner on the sparking plug, compression tap, and valve caps, and squirt a little oil round these joints, afterwards turning the engine over compression and watching for bubbles. With every joint gastight, a cool engine, and a low gear the machine is certain to make a plucky show on the hill, and as the critical patch is neared and the engine labours the rider should jump off and run alongside, hopping on to the pedal or footrest as the engine commences to get away again, but not taking the saddle until it is clear that the engine has the hill at its mercy.

REMOVING A BENT EXHAUST VALVE.

356. A bent exhaust valve is not an unknown occurrence, and presents rather a tough proposition for the average amateur.

The most mechanical method of extracting such a valve is to remove the valve guide, which can then be threaded off the valve stem, after which the valve will easily slip out of the cylinder.

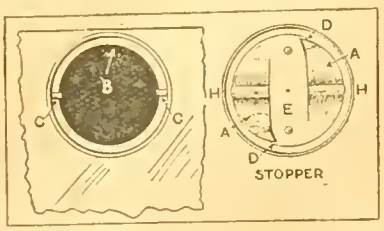
If the valve guide prove immovable, as may well happen, the valve will have to be straightened *in situ* before it can be removed, and as its stem is not designed to withstand heavy side stresses the straightening is not very difficult. It is desirable to save the guide and cylinder from undue abuse, and the chief danger is that when the stem is hit the valve may twist round, and so several blows may be necessary before the stem is roughly trued.

The bent valve should be placed so that its stem points out at right angles to the frame of the machine, and while the valve is held tight at this angle with a pair of gas pliers a heavy blow should be delivered with a stone or screw-hammer on its toe, after which it may usually be coaxed out.

If, as is generally the case, the bend occurs near the toe of the valve the valve should be pushed up till it jams in the guide and only the bent portion protrudes below the guide. The guide then acts as a vice, and holds the valve so firmly that a single smart tap on the toe will knock it straight. Slight bends in the valve stem are a frequent cause of mysterious compression losses, as no amount of grinding will make a bent valve gastight on its seating; hence a valve stem should always be tested for truth when the part is removed for grinding. Many serious losses of compression on prolonged rides are ascribable to this cause.

Two Useful Accessories.

A quickly detachable tank stopper is being sold by the Aston Motor Accessories Co., Ltd., Talford Street, Aston, Birmingham. The filler ring B in tank is provided with two keys or projections C; the stopper E (the sketch shows the under-side) has two flat springs A riveted to it. These springs are curved upward at D and engage with the keys or projections C. To fit the stopper on the filler it is placed over the hole in the filler cap and turned half-round, when the springs A slide over the keys C until the latter engage with the recesses H in the springs. The method of attachment is the same as the one used with success on the Amac float chamber lid, and is one of the neatest attachments of the kind we have inspected up to date. A neat tap for injecting petrol or paraffin into the engine is also made by the same firm. This has been in use on many machines this year with every satisfaction. The tap has a cup on the top which should be first filled with paraffin. When the tap is opened by turning the handle the liquid finds its way into the engine past a ball which serves to make a gastight joint when the handle is screwed down again.



LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Mudguarding Devices.

[5300.]—I see in your issue of January 12th, 1911, you illustrate a belt guard for motor cycles, and you give a Mr. G. Wray as the designer. I should like to point out to you that this is my patent—"Ananke" registered trade mark, No. 300,439, patent No. 9512. C. E. THOMPSON.

The Motor Cycle in France.

[5301.]—Referring to Mr. Skepper's letter [No. 5278] in your issue of January 12th, would this gentleman kindly state whether he fits a sidecar to his Triumph or another machine, and also the make and cost of his sidecar?

I still ride my Triumph in Paris with the front plate number as fitted by the makers, and never had a contravention. L. DUE.

Le Raincy (S. and O.)

Sidecar Attachments and the Tax. The Position in a Nutshell.

[5302.]—There seems to be a lot of uncertainty in some writers' minds as to whether a sidecar attached to a motor cycle is liable for an additional tax. Being large makers of these handy attachments we ourselves are often asked by our customers if any further tax is payable, and over twelve months ago we went completely into the matter, and the whole thing lies in a "nutshell." If attaching a sidecar makes the motor cycle into a four-wheeler (some sidecars have two wheels) the extra tax has to be paid, but if attaching a sidecar makes the motor cycle into a three-wheeler no additional tax is required, unless the combined weight of sidecar and motor cycle is 3 cwts. or over. Therefore users of sidecars with only one wheel (and these are in the majority) are exempt from any further tax unless they reach the 3 cwt. limit.

FARRAR'S MOTOR EXCHANGE.

[5303.]—As a keen motor cyclist and sidecar driver, will you allow me to make a sporting offer? I shall be pleased to fight a test case on this point as solicitor for anyone who is proceeded against by his county council, and to charge him only out-of-pocket payments. The point is of interest to me, of course, and should no doubt be decided by the courts, and it seems to me, from a cursory study of the point, that no licence is necessary beyond the ordinary £1 licence.

G.R.T.

The State of our Highways.

[5304.]—Before leaving Manchester on the 17th inst. per motor cycle *via* Rochdale, Todmorden, Hebden Bridge, Keighley, and Bradford, through oceans of mud, but which, thanks to Mabon's new variable gear, I came through O.K., I received a letter from Mr. Stenson Cooke *re* unrolled stones, saying that he had taken up this matter with the Hampshire County Council, who say that the photograph shows a section of the road 1½ miles over the border of Hampshire County in Wiltshire.

Mr. Cooke further says, "I have received a letter from the county surveyor of Hampshire, in which he states that a reproduction of the photograph taken by you has been published in books as relating to the methods of repairs of roads in Hampshire, and he asks me to point out to you that this is to him a somewhat serious matter."

Now I suppose this refers to the photograph in *The Motor Cycle* of January 12th, and if so (the only one which I have authorised) I wish to thank you most heartily for your part in stirring things up, and if there is any action to be taken against me personally for sending this photograph to be published I hope to have the backing of every one of the fifty-one successful riders in the M.C.C. London-Exeter run who are painfully made aware of—what some county surveyors may feel indignant for being shown up—a most disgraceful state of the King's highways within their jurisdiction.

Mr. Stenson Cooke says that he is communicating with the Wiltshire County Council.

Mr. Harry G. Bell writes me that he was compelled to push his machine over several yards of unrolled stones which filled in the whole roadway from gutter to gutter (me too). I took a photograph of this spot, which includes the milestone "London 68—Andover 4," but as a steam roller was at work at the time I passed over this place, I have purposely refrained from making reference to this section, although I did write Mr. Stenson Cooke that "in more considerate communities a passage was left for current traffic."

I hope that some Englishman will take up this matter and drive it home. H. W. TURNER.

[Our previous reference to this matter merely mentioned the Andover-Salisbury Road, crediting neither the Hampshire nor the Wiltshire County Council with laying the unrolled stones. Local riders will know which county is most at fault in this respect.—ED.]

Renewing Licences in "Clean" Counties.

[5305.]—The time has now arrived when we motor cyclists are called upon to trip gaily to the nearest or some other post office and present £1 to a grateful Government in return for the privilege of keeping and using a bicycle which goes without pedalling. In selecting the scene of operations, viz., the post office aforementioned, let us pause and consider where the money is going. The Essex County Council have sent me (I suppose in common with my petrol brothers) a notice tearfully pointing out the money they have lost owing to motorists and others taking out their licences outside the county. Evidently the setting of police-traps around Witham and other parts has its disadvantages. SHAZBAZZIK.

Sportsman or Potterer?

[5306.]—If "Ixion" will look up the dictionary he will notice that the definition of potterer is one who occupies himself in an inefficient manner, or one who pushes. Now it seems to me that the owner of an unwieldy, noisy, and over-powered machine such as "Ixion" inclines his heart to is far more likely to do the pushing and merit this opprobrious term than the rider of a fast, comfortable, and efficient little lightweight.

Your contributor refers to the cleavage that is taking place amongst motor cyclists, and it causes him to shed a silent tear. He fears the extinction of the old brigade—here's to them—who when their mounts became unmanageable enjoyed recounting to a choice selection of kindred spirits the hardihood and perseverance with which they overcame their difficulties, the tale, you may be sure, not losing in the telling. "Ixion," like the writer, has doubtless been present when trouble in the shape of a disorganised engine or refractory tyre has been met with late on some lonely road, and can probably recollect the "enjoyment" the occasion gave rise to.

In the early days of the pastime (?) it was almost impossible to undertake a long ride without some mechanical trouble, and we accepted this state of affairs as a necessary evil, not because we were, or wanted to pose as, Spartans. Some of us wished to experience the new sensation, with others mercenary motives had weight. However, improvement rapidly came along—the machine was designed to suit the rider instead of the rider having to adapt himself to the machine, consequently this led not so much to a cleavage in the existing ranks as to the introduction of the man in the street who had been waiting patiently but observantly. This man "Ixion" slightingly designates the potterer,

but recognises in him the rider to whom the trade must look to for support in the future, so "bites smiling."

I wonder if any survivor of the old "breed" took part in the winter runs; if so, what were they doing upon such unsportsmanlike looking machines fitted with every imaginable contrivance for ensuring warmth and cleanliness? Do I blame them? Not a bit. It only proves it is possible to be a potterer (one who according to "Ixion" looks after his own comfort) and at the same time a sportsman.

LIGHTWEIGHT.

[5307.]—In my letter [5275] published January 12th occurred two printer's errors, one of them important, namely, the substitution of "most" for "not" in the first sentence, which should have run: "Are many of them *not* interested in the competition side of motor cycling?" If the letter signed "Hugh Gibson" is an example of the "sportsman" side, then I for one prefer to rest under the stigma of "potterer." If the A.C.U. or M.C.C. would only organise a cross-country competition by field roads across waste land, etc., the single-speed high horse-power competition riders would soon have their eyes opened.

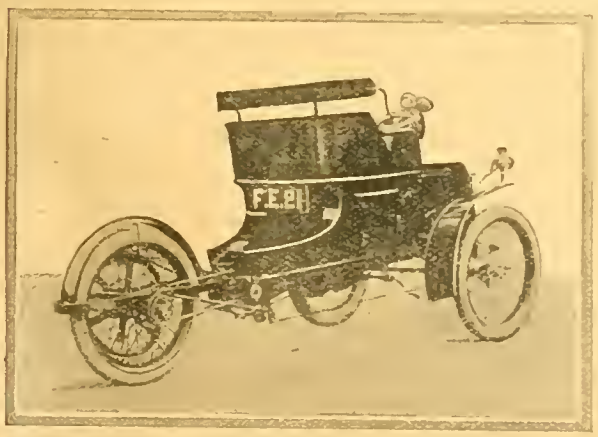
As it is, if any of these "sportsmen" like to come down my way and bring their machines within the next week or two, while we have plenty of clay and ruts, I will give them a run across country of thirty miles and defy them not to leave the saddle during the journey, abiding by the same conditions myself, riding a 2¾ h.p. Douglas, and my own weight being 15 stones. My machine is two years old, and has done 21,000 miles.

CHARLES S. PATTERSON, M.B., M.R.C.S.

["Ixion" will reply to the various criticisms of his article in the next issue.—ED.]

Passenger Motor Cycles.

[5308.]—A reader asks why has no British firm made a runabout on Phänomobile lines? In reply we are forwarding to you a photograph of a three-wheeled car which we made at Walthamstow and later exhibited at the Agri-



Passenger machine referred to in letter No. 5308.

cultural Hall Motor Show (Minor Hall) about 1904, but the demand at that time was not enough to continue manufacture.

BREMER ENGINEERING CO.

Lamps and Night Riding.

[5309.]—Referring to your article on page 28 of your issue of January 12th, under the heading of "A Strong Hint," that in the London to Exeter run practically every machine was fitted with two or more lamps and generators, this should not be taken as a criterion that the riders had not sufficient confidence in any make of lamp to rely upon it alone. As a competitor in this run I fitted two well-known makes of lamps, both latest models, one being on the handle bars. My idea was that in the event of a fall, a not unlikely contingency in view of the bad state of the roads, and possible damage to one lamp, I should have another to fall back on. As a matter of fact, this turned out to be the case, and one of my lamps was put entirely out of action. You may draw your own conclusions on the plight I should have been in had I been without the other lamp.

I have done a good deal of riding this winter, and have always used one lamp only, either my Lucas or Solar, both of which I have found give a powerful light along the road a considerable distance, and on the sides of the road, and can always rely on whichever I may be carrying.

With regard to generators, I think most riders carried one or more extra (according to capacity) so that in the event of one being used up, there was no need for delay to recharge.

For ordinary riding I have found, and others will no doubt agree, that one good class lamp is amply sufficient.

WILFRED C. HEMY.

[Letters couched in a similar strain have been received from W. Cooper, C. C. Cooke, J. S. Holroyd, and H. Johnson (Joseph Lucas, Ltd.), but the one published will suffice.—ED.]

Forced Induction.

[5310.]—Referring to the article on "Forced Induction," I disagree with some of the assumptions made therein, and should like to make a few comments on it.

There is no advantage in increased compression brought about in this way, since the engine must do work on the fan to produce it, and that work is not regained because the gas is not expanded after the explosion to the extent it would be if the compression were caused by the piston. In fact, there is a considerable waste of energy due to the high pressure in the cylinder when the exhaust valve opens. This arrangement is, in effect, diametrically opposite to that of the Atkinson engine, which has a low compression and a long expansion stroke. The only advantage likely to be gained is that more power can be developed per c.c. of cylinder volume, and higher speeds will be obtained. For this reason, viz., a given cylinder will develop more heat with forced induction, it does not appear likely that the engine will be cooler running, since the cooling surface per horse-power will be less.

Again, what is the advantage of compressing gas with a pump, and then throttling down below atmospheric pressure? For touring purposes the engine is seldom run with the throttle fully open, and therefore the general utility of a motor bicycle is not likely to be increased by the addition of forced induction.

CARNOT.

[5311.]—I have read with much interest the article on "Forced Induction" which appeared in your issue of the 12th, but I think that "scavenging" would have been a more appropriate title. Let us take the headings as set out under "Advantages Explained."

1. "The removal of negative pressure, the charge being always ready mixed in the induction pipe."

Surely the advantages gained on this ground can be in no way sufficient to warrant the fitting of a fan.

2. "Increase of compression with speed of engine."

It would be interesting to hear of any fan of a suitable size for motor cycle work that would feed mixture, at any considerable pressure, to a modern 3½ h.p. engine.

3. "A cooler running engine, the forced charge scavenging the cylinder."

Here, to my mind, is the real reason for any increase in power which has been noticed by "W.M.B." during his experiments. In his article he said, "For running with forced induction the inlet should open much earlier than usual," and he shows a diagram with a 45° overlap for inlet and exhaust.

Now if the experiments had been made with true forced induction, this setting would not have been necessary in order to gain an increase in power.

Scavenging by aid of the mixture and an overlap of 45° will surely tend towards bad popping back.

If anyone interested will look up one of the standard works on "Internal Combustion Engines" he will find that the valve setting advocated by "W.M.B." corresponds closely with the type used when special air scavenging arrangements are made.

Referring again to heading 2, I do not think that the compression will be raised, but a higher mean effective

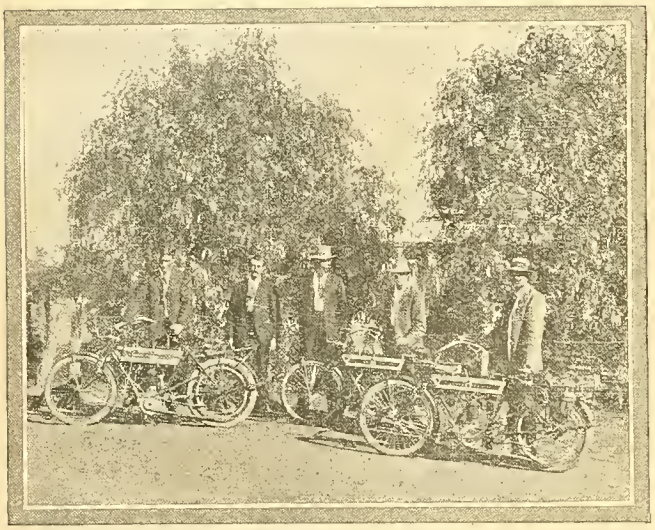
pressure will be obtained, due to the charge being purer, richer, and cooler than under the ordinary arrangement.

For a case of true forced induction with its many advantages, I think the Gore engine is a good example. A most interesting article on this engine appeared in *The Autocar* for July 31st, 1909, and a study of the methods employed by Mr. Gore would well repay those interested.

R.M.S.M.

[5312.]—Referring to the article in the issue of January 12th, I would like to say that I tried forced induction on an old Minerva motor cycle some six years ago. This had an automatic inlet valve and a Longuemare carburetter. I fitted a funnel first, and not being satisfied, owing to trouble in starting, I fitted a fan. This made a great deal of difference, and required a lot of alterations to valves and level of petrol in the carburetter. When I first fitted the fan, with the inlet valve spring at the original tension, I found that the valve was lifted off its seat before the exhaust stroke was completed, giving a very good scavenging effect, but causing overheating, but on fitting a stronger spring to the inlet valve, which equalised the pressure in the induction pipe, this vanished.

I then noticed that a spray of wet vapour used to be blown out of the hole in the induction pipe, used for priming purposes. After a lot of alterations to the float chamber I found



West Australian motor cyclists. (See letter No. 5314.)

that about a quarter of an inch below the jet was the best level for the spirit. The result was easy starting, no lag of inlet valve, no snorting on being sucked open; in fact, it was open before the exhaust closed. This was a success, but at the expense of a lot of trouble. Then came a rather serious collision, which put everything out of order and upset me for a time, although I am keener than ever now on motor cycling.

VERD. J. GIBSON.

[5313.]—Referring to the article on "Forced Induction," I believe that the petrol engine of the future will have no carburetter at all—in any case not the two-stroke type. My reasons for this view are as follow: The energy consumed by a "blower" is less than that which the engine has to do itself, when acting as a pump on the suction stroke. A carburetter can easily be dispensed with when the engine has to run at constant or nearly constant speed and load, as, for instance, the aeroplane engines have to do. The Antoinette and Wright engines have no carburetter, and there are two ways to increase the charge and get a full charge into the cylinder. Firstly, petrol stands under pressure and is forced through a jet, the engine drawing in air and gas by the vacuum created on the induction stroke. The other way, as in gas engine practice, where separate gas and air pumps are used, is to force or pump air into the cylinder and let the jet (if there be one) perform the function of an ejector. If either gas or air can be controlled satisfactorily, there is no need then for a carburetter, and looking through the above-mentioned article, I find, and think, that "W.M.B." will arrive at the same result. The mere fact that somebody is branching out on a new line which you, Mr. Editor, find worth while publishing is surely a step forward.

Berlin. R. RÜDE.

The Motor Cycle in the Antipodes.

[5314.]—I am sending you a photograph showing three motor cyclists in our far away station country. The riders are Messrs. Atkins, Fremlin, and Lefroy, to whom motor cycles, like "the Owl, the Pickwick, and Waverley pen," are a boon and a blessing. Tedious journeys through the country formerly took days, where now they take hours. Sixty miles with a horse was a day's journey, but with the motor cycle one does it comfortably in three hours.

These station people do appreciate first-class workmanship.

Perth, W. Australia. P. W. ARMSTRONG.

Cost of Running a Motor Cycle.

[5315.]—Seeing statements of running costs, I thought the following particulars showing the cost of running three Douglas motor cycles might be of interest to your readers. As I keep a record of my expenses and mileage, these figures can be relied upon as absolutely correct. Most of the distances have been over the bad roads and hills of Gloucestershire and Somerset.

(1.) 1908 Douglas, run 4,489 miles, from May, 1908, until September, 1909.

	£	s.	d.
Cost (new) with accessories	36	10	0
Sold, September, 1909, for	20	10	0
Depreciation	16	0	0
Petrol, 46 gallons	2	12	6
Oil		11	0
Licences	2	0	0
Tyres	3	1	9
Various renewals, cleaning engine, etc. ...	1	12	0
Sundries, plugs, etc.		10	0
Belts	1	0	3
Total	£27	7	6

This works out at 1.46d. per mile, or, omitting depreciation, just over ½d. per mile.

(2.) 1909 Douglas, purchased in September, 1909, second-hand, and run 930 miles until February, 1910. Cost worked out at one-third of a penny per mile, as the machine was sold without loss.

(3.) 1910 Douglas, new March, 1910, and run to date (January 7th, 1911), 5,190 miles.

	£	s.	d.
Cost with accessories	41	6	0
Petrol, 52 gallons	3	0	8
Oil		14	6
Licences	1	5	0
Various repairs and renewals and engine cleaning	2	0	0
Sundries, plugs, etc.	1	1	10
Belts (run 2,000 miles each)	1	9	0
Total	£9	11	0

This works out at .4d. per mile, or, reckoning depreciation at, say, £10, total cost would be .9d. per mile.

No expenses were incurred under tyres, as the pair supplied with the machine are still in use, and the rubber studs are not worn off. Only two punctures.

A. N. COTTERELL.

[5316.]—With reference to letter No. 5267, I notice that Messrs. Pielon and Moore consider 10,000 miles an exceptionally hard season's work for a motor cycle. It may interest them to know that one of my machines ran 15,271 miles between January 10th, 1910, and October 17th, 1910. The big ends are slightly worn, but I hope to get another 2,000 miles before having them rebushed. The only replacement in the engine was one piston ring, which I broke in removing for cleaning.

With regard to the cost of running, I do not keep an account of petrol and oil, but in addition to the four covers on the two machines when I bought them, I have purchased six more covers, of which only one is now in first-class condition. That is to say, I have worn out nine covers in 20,107 miles, the total mileage for both machines during 1910.

I also notice that Messrs. Phelon and Moore say that Mr. Pirie apparently ran his machine year in and year out regardless of weather. What if he did? Are we supposed to travel by train when it rains or snows? Nobody has a greater respect for the Phelon and Moore machine than myself—in fact, if I ever bought another single-cylinder, I think I should buy a Phelon and Moore, but to imply that a machine should have to consider either the weather or the roads is ridiculous. I expect Mr. Pirie bought his machine for the same purpose that I buy mine—to go anywhere in any weather.

THOMAS TRINAMAN.

16,000 Miles with a 3½ h.p. Sidecar.

[5317.]—I have read with much pleasure the above very interesting article in your issue of 19th inst. Perhaps Mr. New would be kind enough to give a little information regarding engine lubrication under the conditions so totally different from solo work. R. HOLFORD JONES.

Steering Design.

[5318.]—As the writer of a letter on steering design some time ago, I contended, among other things, that positive steering was not a serious matter. At the time I was surprised that none of your readers had anything to say on the subject. On October 20th, Mr. Douglas Leechman replied with an article on steering design. In this article he said he was of the opinion that positive steering was dangerous. Now I should like to hear what riders of the Wilkinson T.A.C. have to say with regard to the steering of this machine.

WILLIAM HUTCHISON.

The Motor Cycle in France.

[5319.]—Referring to Mr. Skepper's remarks re my previous letter which appeared in your issue of the 5th inst., I beg to say that he is quite correct, though the carrying of plates is not rigorously enforced. Number-plates on French machines are more or less a scarcity. Amongst the members of this club I may state that not one member carries a number-plate of any description.

Lyons Motor Cycle Club. R. J. SCHILLING.

P.S.—I find I made a mistake in one of my previous letters when stating that the motor cycle tax was valid for three years. This should have read one year.

[See also letter No. 5301.—ED.]

An Old Boys' Ride.

[5320.]—On December 27th I went for my first winter's run on a motor bicycle, there was a keen frost and the roads were very hard. I had looked forward to it with great curiosity, for I had heard of so many misadventures caused by the frost that when the time came I felt half afraid to start. I had changed the pedalling gear from 44 to 36, and fitted a dropped saddle-pillar and XL saddle, which not only added to the comfort of riding, but brought my short legs in reach of the ground. It was very cold, but I had bought a warm suit of motor clothing at the exhibition and an Arctic cap (thanks to your advice). I took out the machine, wondering if the petrol pipe or the oil would freeze up first, and if I should get back home in time. The petrol did not freeze up, and the oil did not stick. I was soon in the country. The sun was shining, and my bicycle went flying along up hill and down, through woods and fields, or over rivers, in highways or bylanes, at 30 m.p.h., now and then I stopped to look at something, and on again. Here the comfort of my reduced pedalling gear came in. I just put my foot over on the off pedal and away it went. A free engine was "not in it" for ease of starting. At the finish I felt life had a new sensation and I was no longer old. I thanked God for life and health.

Now the above is not a very startling record ride, but pleasure does not always lie in hill-climbs or twenty-four hour runs; they are very interesting, but not in everybody's line. T. ABLE.

Mechanically Operated Scavenging Devices.

[5321.]—I notice a letter in *The Motor Cycle* in which a scavenging device is illustrated. There was a boom in scavenging devices in the early eighties, and the device described is one which was patented, I think, by Mr. Michael Longridge somewhere about 1886. The difficulty seems to be that gears have to take the shocks of the explosion and make a deal of noise. There are several scavenging devices to be seen in South Kensington Museum.

M.

An Experience with Various Accessories.

[5322.]—The following experience may prove of interest to other motor cyclists who are now enjoying tyre trouble.

After ten months of tyre troubles in the shape of punctures I inserted Firmax in both tubes in July last. I believe it will burst butt-enders, but I have only tried endless.

Result: Mileage by Cowey since July 2,200, including a week of manœuvres as a very energetic spectator, and a 600 miles tour.

Tyre trouble: One small burst in rear cover and tube about a quarter of an inch in diameter. This Firmax plugged, and I was able to proceed home, six miles, at a moderate pace.

A Whittle has eliminated belt trouble, and an A.S.L. pillar vibration, though in the last case some kind of spring footboards and handle-bars are also advisable.

The usual disclaimer holds good. T. D. MURRAY.

Sidecar Licences. The A.C.U. Solicitor's Views.

[5323.]—In regard to the taxation licence for sidecars, as this matter has already received the very careful consideration of the Auto Cycle Union, it may perhaps be of interest to your readers to know what position this body has taken up with regard to the question. In the first place, it is necessary to point out that the question as to whether an extra licence is required for sidecars is purely one of law for decision by the Courts, and that any opinion expressed by the Treasury, or by the County Councils Association, or the Local Government Board as to the construction of the Acts is not necessarily final and binding. The Auto Cycle Union is advised by its solicitor that, where a sidecar which has only one wheel is affixed to a motor bicycle, the combination of the two vehicles constitutes a tricycle, and that, further, it only requires one licence, as a motor tricycle, in respect of which the sum of £1 per annum is payable. If any local authority endeavours to enforce payment of an extra tax of 15s. for a one-wheeled sidecar, the Auto Cycle Union is prepared to fight the case and take it to the High Court for an authoritative decision.

The position, however, is different if a two-wheeled sidecar is affixed, as the combined vehicle then becomes one of four wheels, and cannot strictly be defined as a tricycle.

F. STRAIGHT, Secretary A.C.U.

An Enthusiastic Owner's Tribute.

[5324.]—I have lately purchased a modern 3½ h.p. standard motor cycle, and though 200 miles have not yet been covered on it, it is very easy to see what a vast improvement in every way, especially in power and comfort, has been made in this type of machine.

This, of course, is well known, but I do not think the public fully realise the cause of this great advance in all-round efficiency. Undoubtedly it is owing to the motor cycle press, and to your journal, sir, in particular, which has focussed public opinion on the achievements of individual machines in the trials during the last eight years. It has to a very large extent formed a motor cycling public, and been its mouthpiece in a very efficient manner. Having read *The Motor Cycle* for the past seven years, I have been very pleased at the way in which manufacturers have so quickly adopted hints and tips therein contained, and catered for riders' wants when expressed in print. What the actual motor cycle would be without its guide, philosopher, and friend *The Motor Cycle* I do not know.

One cannot conclude without a word of thanks to such writers at B. H. Davies, "Ixion," and "Road Rider," who very ably espouse the rider's cause, and help in no small way to turn out better machines year by year.

J. P. SOWERBY.

[A number of letters are unavoidably held over.—ED.]

LEADING MOTOR CYCLE CLUBS

Mr. F. G. Alden, hon. treasurer.

Mr. W. A. Matthews, hon. sec.

THE OXFORD MOTOR CYCLING CLUB.

THE Oxford Motor Cycling Club is now a prominent provincial club, and owes its origin to a small group of ardent motor cyclists who in the year 1905 formed a semi-private club under the name of "The Boanerges Motor Cycling Club," although usually known as "The Sons of Thunder," which the title indicates.

Later it assumed the name of the "Bocardo Motor Cycling Club," and in 1909, as the membership had gradually increased, it was justified in adopting the name which it now holds with a view to extending its influence and to create interest in and new converts to the pastime of motor cycling generally.

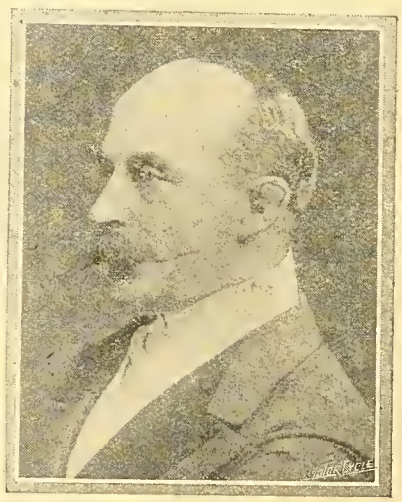
Since then the membership has gradually increased, and now approaches a total of one hundred. The club is affiliated to the Royal Automobile Club and the Auto Cycle Union, and the majority of the members fully appreciate the benefits which these and other similar governing bodies have obtained for motorists, and some members have received practical illustration of the advantages given, such as "free legal defence" and "touring facilities."

Mr. H. G. Hill, trials hon. sec.

The year 1910 has in many ways been an eventful one for the club, for at the commencement of the year the committee were so encouraged by the increase of membership that they used every endeavour to extend the attractions and usefulness of the club.

A varied and interesting competition programme was arranged, including inter-club competitions, and on the whole it was successful, yet it is the case with this club, as it is with many others, that competitions receive support by only a small percentage of members.

The Oxford Motor Cycling Club was also fortunate in obtaining the patronage



Mr. Harvey Du Cros, J.P., the president.

of Harvey du Cros, Esq., J.P., as president, and other well-known motorists as vice-presidents, and it may be mentioned here that the president has presented the club with a very handsome Silver Challenge Cup.

This club has for the past three years sent a team to compete in the M.C.C. competition for *The Motor Cycle* Challenge Cup, being placed seventh last year and the two preceding years third.

Members of this club have taken an active interest in connection with the Auto Cycle Union Quarterly Trials by marking and patrolling part of the course.

The Oxford Motor Cycling Club has been running on a 5s. subscription, which includes affiliation, and it is evident that, taking into consideration the advantages offered by this club, the subscription is very moderate, and, in fact, the question of raising the subscription will in the near future receive the serious consideration of the committee, as without sufficient funds the club is not justified in further launching out in any particular way, which it would like to do, in the interests of its members.

The future appears very hopeful for this club, and the chief event for 1911 will be the Open Hill Climb for Motor Cycles, to be held on Saturday, April 8th.

The Members' Competitions will again include Hill Climbing and Reliability Competitions, and among the social runs we may mention a visit to Howbery Park by kind invitation of the president, and to Deddington by the kind invitation of a vice-president, Dr. G. Horatio Jones.

Full particulars of the club may be obtained from Mr. W. A. Matthews, 6, St. Aldgate's, Oxford.

Mr. J. F. Salter, captain.

ESSEX M.C. ANNUAL DINNER.

THE Essex Motor Club held its annual dinner at the Holborn Restaurant on Saturday evening last. Mr. Stenson Cooke was in the chair, and after proposing the toast of "The King," said he was glad to note the wonderful strides in the motor cycle industry; the principal motoring societies were making serious love to motor cyclists. He mentioned how Miss Muriel Hind had been the leading spirit in the club's chippled children's outing, and how shortly she would give them a tea this winter.

Mr. Harold Fuller (hon. secretary), in reply, spoke of the 1910 events, and said he had pleasure in announcing that Mr. S. J. Cummings would present gold, silver, and bronze medals for a competition this year, if twenty entries were received. (Cheers.)

Mr. A. G. Reynolds (hon. treasurer) said that he thought the individual members had not supported the executive sufficiently well. The club had just completed its third year, always a critical period. There were, however, 111 good members.

The prizes won in 1910 were then presented by Mrs. Stenson Cooke, after which Mr. B. C. de W. Siffken proposed the ladies, the visitors, and the press. Among the visitors he noticed Mr. F. Straight (secretary A.C.U.) Fifty per cent. of the improvements in motor cycl were due to the A.C.U. and the remai ing fifty per cent. to the press. M Siffken then made some very kind r marks about *The Motor Cycle* which w should blush to publish.

Mr. Straight replied for the visitor Mr. F. N. Wilde for the ladies, a Mr. E. M. P. Boileau (*The Motor Cycl* for the press.

Mr. O. L. Summers proposed "T Chairman," and said he could not he mentioning the important part taken the cripples' outing by Mr. Stens Cooke, who had sent thirteen or fou teen cars, and had collected a sufficie sum to pay for the children's meals.

ABOUT THE NEW ROVER.

BARELY three months ago, Mr. J. K. Starley, the general manager of the Rover Co., Ltd., mentioned to the writer that it was his firm's intention to place a motor bicycle on the market. We live in an age of wonders, but when that promised Rover duly materialised at Olympia the following month, *i.e.*, within six weeks of the first stroke being put on the drawing board (which included making a pattern and casting the cylinder in the Rover Works), those in the know quietly marvelled at the achievement. Last week end we enjoyed a spin over typical winter roads on one of these machines, and we would defy any experienced rider to say whether the 85 by 88 mm. engine is not the outcome of three years' continual experimenting and improvement, instead of the three months actually to its credit. In a word, the 3½ h.p. free engine Rover has reached the first flight at a single bound. Speed it does not lack, for 48 m.p.h (by Cowey speedometer) is surely quick travelling over roads not altogether dry. It is a glutton for hills, and with a 4½ to 1 gear takes Stoneleigh (gradient 1 in 9) without slowing a perceptible tick. Its long wheelbase, combined with the Druid fork and Brooks saddle, account for its smooth and steady running, and, above all, it steers as a motor bicycle should do, that is, a regular bee line with hands off the bars.

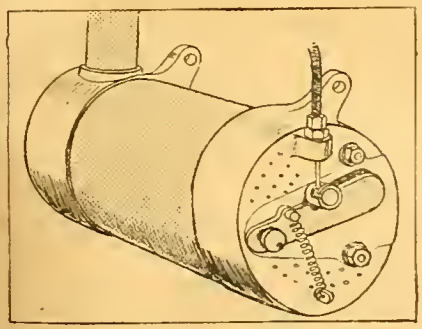
Starting away from the Rover Works. Not the least advantage of a free engine machine is that a long heavy motor coat may be worn without difficulty in mounting.

Control Entirely from the Handle-bar.

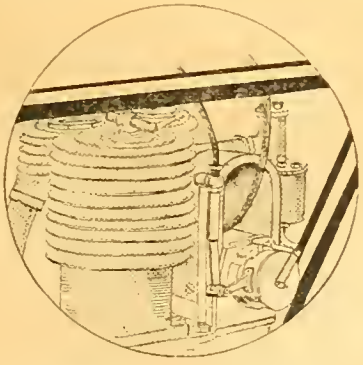
An unusual feature of the Rover is the handle bar controlled silencer cut-out—in fact, everything on the machine is handle-bar controlled except the clutch. On the left grip, the magneto control and cut-out levers are affixed, B. and B. control being fitted to the right grip in the usual manner, but with the levers opening inwards. Personally, we much prefer the carburetter levers arranged in this manner, for on a hill one can gradually close the air lever as necessary with the thumb, without losing a firm grip of the bar. Altogether this complete system of handle-bar control is as convenient as one could desire, and, what is more, it renders driving doubly interesting.

Reverting to the engine, this we found to be very flexible, and by no means noisy with the cut-out closed; when open the engine emits that crisp healthy bark so beloved of the competition rider. The spring tappets contribute in no small measure to the silence of the valve gear. As regards general equipment, front and rear wheel stands satisfy the tourists' requirements, the adjustable pulley is one which is readily alterable, whilst the magneto is mounted at the rear of the cylinder on a platform cast *en bloc* with the crank case. This position has already been lauded to the skies, so we need but add that after our trips over really treacherous and muddy roads there was hardly a speck of dirt on the magneto, proving that the claims for this screened position are not altogether empty. No, the steering was not affected!

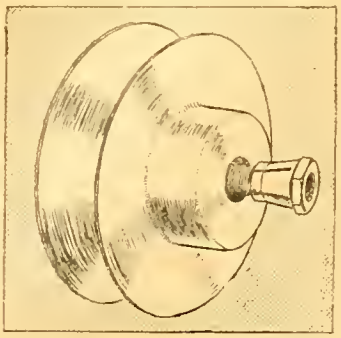
If all the 1911 Rovers are as good as the one we sampled, there will be some enthusiastic owners of these machines on the roads this year



Rover silencer cut-out operated by handle-bar control lever.



The handle-bar controlled magneto contact breaker.



Adjustable engine pulley, the outer flange of which is secured by the cone-shaped nut.

A.C.U. Quarterly Trial.

Entries and General Notes.

THE following is a complete list of entries received up to date for Saturday's trial. The start will be at 9 a.m. from the Swan and Sugar Loaf Hotel, South Croydon, the route is to Hastings and back (as published on page 39, January 12th), and the distance 128 miles. Times will be taken on Westerham, and also on Chalk Pit or Titsey Hills. A contour section of Chalk Pit Hill was given on the same page as the route and regulations.

*W. Cooper (3½ Bradbury)
A. J. Stevens and Co., Ltd. (2½ A.J.S.)
A. J. Stevens and Co., Ltd. (2½ A.J.S.)
Premier Cycle Co. (3½ Premier)
Premier Cycle Co. (3½ Premier)
Scott Eng. Co. (3¾ Scott)
*Percy Butler (4 Dot)
*A. J. Luce (8 Bat)
H. Greaves (2¾ Enfield)
W. H. Islip (2¾ Enfield)
J. W. Woodhouse (3½ Calthorpe)
*A. C. Robbins (3½ Humber)
H. F. E. Morgan (Morgan Runabout)
B. Alan Hill (3½ Rudge-Whitworth)
*E. B. Ware (8 Chater-Lea and sc.)
*V. Armstrong (3½ Premier)
*Walter Houghton (3½ Bradbury)
*H. J. Pooley (3½ Premier)
James Cycle Co. (3½ James)
James Cycle Co. (3½ James)
Rudge - Whitworth, Ltd. (3½ Rudge)
Rudge - Whitworth, Ltd. (3½ Rudge)
*G. T. Gray (3½ Humber and sc.)
*A. C. Huskinson (5 Vindec and sc.)
Harry Reed (3½ Dot)
B. J. Buckman (4 Buck)
*G. L. Fletcher (2¾ Douglas)
*V. Wilberforce (5 Indian)
*G. Gray (3½ Triumph)
*W. O. O. Oldham (5 Vindec Special)
Lake and Elliot, Ltd. (3½ Millennium and sc.)
Moto-Rêve, Ltd. (2¾ Moto-Rêve)
Moto-Rêve, Ltd. (1½ Moto-Rêve)
Moto-Rêve, Ltd. (2¾ Moto-Rêve)
*A. H. Hawkins (3½ Premier)
C. Bayley (3½ Clyde)
A. M. Flint (2½ Flint)
H. C. Newman (3½ Ivy-Precision)
*H. Johnson (3½ Triumph)
*Rev. E. P. Greenhill (2¾ Douglas)
*G. Patterson, jun. (2½ New Hudson)
*H. G. Dixon (2½ New Hudson)
*A. N. Cunnington (3½ Premier)
F. W. Arrow (3½ Premier)
W. B. Gibb (2¾ Douglas)
*H. J. M. Hughes (3½ Premier and sc.)
Clyno Eng. Co. (5-6 Clyno and sc.)
*F. H. Stevenson (8 Matchless and sc.)
Wilkinson T.A.C. Co. (7 Wilkinson T.A.C.)
Wilkinson T.A.C. Co. (7 Wilkinson T.A.C.)
G. N. Higgs (5-6 A.C. Sociable)
Forward Cycle Co. (2¼ Forward)
*G. Hughes (3½ P. and M. and sc.)
J. R. Brown (3½ Lincoln Elk)
*A. J. Atkings (5 A.C. Sociable).
*E. C. Jarvis (3½ Triumph)
Auto Carriers, Ltd. (5-6 A.C. Sociable)
Auto Carriers, Ltd. (5-6 A.C. Sociable)
Auto Carriers, Ltd. (5-6 A.C. Sociable)
Auto Carriers, Ltd. (5-6 A.C. Mighty Atom)
Auto Carriers, Ltd. (5-6 A.C. Sociable)
*R. R. Spread (3½ Trump Jap)
*H. A. Cooper (3½ Bradbury)
*Rex Mundy (3½ Triumph)
J. Davis (8 Davis Double)

*Private owners.

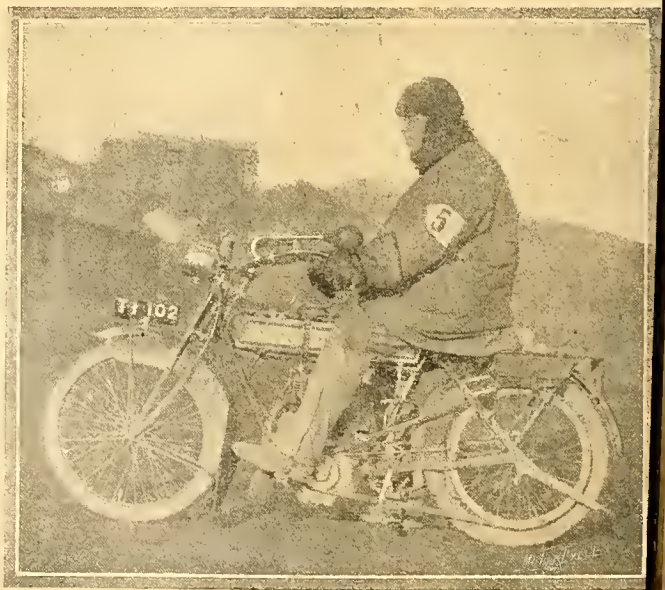
Road Conditions on the Course.

At the beginning of this week, when we went over the new Quarterly Trials course, mud abounded in the Surrey portions. The main road from Purley is bad enough, but on leaving it to ascend the hill leading to Upper Warlingham, it becomes a quagmire. The whole of its surface from start to finish is bad, but there is a slight improvement as far as the descent to Westerham, which is tolerably good. The surface on Westerham is perfect. Hawley's Corner, where the men turn off for Knockholt, is rather a difficulty, as two roads converge, and join the main road at this point. Competitors take the right fork.

Next comes an exceedingly tricky piece of road. The condition is fair, but there is quite enough mud to make the going unpleasant. At the next road fork bear left, and a little further on turn left opposite a sign-post to Knockholt. Immediately after this turn sharp to the right, an exceedingly difficult turn, which requires great caution. Go straight through Knockholt, and at Knockholt Pound, the next village, go straight on past the Horseshoes Inn, keeping little green opposite on left, following the road to Dunton Green, where join the main road.

Leaving the Bull Inn, Limpsfield, competitors turn left at the bottom of the hill, bear to the right about threequarters of a mile further on, and pass twice under the railway, then under another bridge, carrying the same line, and then take the first turning on the right, passing under the railway for the fourth time. The approach to the hill, on an up grade all the way, is in an appalling state. The road is a sea of mud, ruts, and puddles, and is in very bad condition.

Competitors will receive word from the marshal at the Bull as to whether Chalk Pit or Titsey Hills will be ascended. If the latter, the right-hand road at the bottom of the hill in the village will be taken.



A. M. C. Scott (3½ h.p. Rudge-Whitworth) in the Exeter M.C.C. run to Land's End and back on the 22nd inst. He retired at Bodmin owing to a skid.

CURRENT CHAT

Time to Light Lamps

(Greenwich).

Jan.	26th	5.34 p.m.
,,	28th ...	5.38 ..
,,	30th ...	5.44 ..
Feb.	1st	5.47 ..

Special Features

THROUGH MONGOLIA BY MOTOR CYCLE (Illustrated).

Variable Gears and Slipping Clutches.

Leading Motor Cycle Clubs: The Oxford M.C.C.

SATURDAY'S QUARTERLY TRIALS.

Judges in the Lamp Trial.

The judges in the A.C.U. motor cycle lamp test to be held at Brooklands on Thursday, the 9th prox., will be Messrs. C. C. Cooke, V. Hart, A. Sharp, and J. F. Simmance.

Honister Pass Hill-climb.

Concerning the Honister Pass hill-climb, which is being organised by the Southport M.C.C., we hear on excellent authority that the event is arousing great interest, and that quite a number of riders have signified their intention of competing.

The Trade and the T.T. Race.

We have definite information pointing to the fact that the A.C.U. need not hesitate to divide the Senior T.T. into single and twin-cylinder classes on account of the lack of a trophy. The trade itself is willing to provide a suitable prize for the winner of the twin class if the A.C.U. falls in with the recent trade suggestion that the senior race be confined to single-cylinder machines only.

The Threatened Sidecar Tax.

Bristol sidecar owners will be interested to know that they are not liable for the extra tax which caused trouble and threats of a test case in the latter part of 1910. Enquiry at the Bristol Council House elicited the fact that sidecars are not now taken into account. The combination is treated as a tricycle, though some riders had gone to the trouble of brazing sidecars on to their motor cycles to avoid the threatened extra tax.

Saturday's Quarterly Trial.

The total number of entries received up to the time of going to press was sixty-five. Thirty three of these are trade entrants, twenty-eight are private owners, and four are doubtful, *i.e.*, the A.C.U. is not certain under which heading they should be classified.

The route cards of Saturday's trials have just been issued. The start from the Swan and Sugar-loaf Hotel, South Croydon, will be at 9 a.m. The first hill, leading to Upper Warlingham, will be reached about twelve minutes later, Westerham Village at about 9.35 a.m., Hastings between 12.15 and 12.30 p.m. The men will stop one hour for lunch, and Limpsfield will be reached about 3.40 p.m., Chalk Pit Hill being three miles farther on. The first man is due back at South Croydon at about 4.16 p.m.

A Long Ride.

The accompanying photograph is that of Mr. Fred Dover, president of the Sheffield and Hallamshire M.C.C., who, as already mentioned in *The Motor Cycle*, is contemplating a "round the coast" ride to prove the reliability of the modern motor bicycle. Mr. Dover expects to be ready to start about the middle of May, and will probably make Liverpool the starting and finishing point, riding North from that city.

F. Dover, who is to ride round the coast.

His mount will be a T.T. Roadster Triumph, and he intends to cover from 200 to 300 miles per day, according to circumstances. He will make a start each day between 4 a.m. and 8 a.m., according to the time of arrival the previous night, and will ride for twelve hours, or longer if he feels fit and well enough to continue, but the average legal limit of speed will not be exceeded. A personal account of the rider's progress will be published exclusively in *The Motor Cycle*. We shall also seal Mr. Dover's machine at his request, and verify the performance by means of checking cards, duly signed and witnessed, which will be posted to the Editor daily.

FUTURE EVENTS.

Jan. 26	Auto Cycle Union Annual Dinner
,, 28	A.C.U. Quarterly Trials Metropolitan centre. Croydon to Hastings and back.
Feb. 6-11	Auto Cycle Union Lamp Trial at Brooklands.
,, 8-11	Motor Cycle Show at Leicester
,, 16	M.C.C. Smoking Concert
Mar. 18	M.C.C. Opening Run.
Apr. 8	Oxford M.C.C. Open Hill Climb.
,, 14-17	M.C.C. London - Land's End Trial and Easter Tour.
,, 22	A.C.U. Quarterly Trial Yorkshire centre.
May 13	M.C.C. Hill Climb.
,, 27	Bristol B. & M.C. Open Hill Climb.

Slide Valve Motor Cycle Engine.

Rumours being current to the effect that the Birmingham Small Arms Co., Ltd., were about to introduce a B.S.A. motor bicycle with an air-cooled slide valve engine, we communicated with the company, and they ask us to give an absolute denial to the rumour.

A.C.U. Handbook.

The first meeting of the A.C.U. Handbook Sub-committee was held on Friday evening last. It was decided to proceed with the compilation of the Handbook forthwith, and the following list of contents was passed and approved:

A.C.U. rules, Competition rules, Local Centre rules, Hill climbing competition rules, etc., Formulæ for motor cycle events, Cubical capacity table, and Gear table.

The law affecting motor cycles, including local taxation licences, speed prohibitions and caution signs, a summary of the laws for vehicles, byelaws for exemptions, registration, and licensing information.

List of affiliated clubs (with hon. secretary's name and address and headquarters). Records. Summary of 1910 events. Results for hill-climbs, and Speed tables.

Directory of names of motor cycles and motor cycle manufacturers, Trophies of the A.C.U., Touring information, Ferries in England and Wales and their charges, Railway charges for motor cycles, and Customs fees and steamer charges.

When compiled it should be a really useful publication, as it will be the first official handbook published solely for motor cyclists. It is proposed to send it, if possible, to every member of the A.C.U. free of charge.

Exeter-Land's End-Exeter run. The first group of seven competitors to reach Penzance.

The Hour Record.

As we closed down for press, G. E. Stanley was contemplating an attack on the hour single-cylinder record, riding a 1911 pattern 3½ h.p. Singer. He had given the necessary twenty-four hours' notice to the A.C.U.

Solving the Luggage Problem.

An ingenious friend who toured from the Midlands to the South-west at Christmas has, in his own opinion, solved the problem of the carriage of luggage on a motor cycle. The weather being cold he duplicated nearly all his underclothing, and finally, to curtail luggage space wore his pyjama sleeping suit over his jacket and under his mackintosh overalls! Needless to say he created a mild diversion at a stopping place *en route* when he absent mindedly unfastened his mackintosh.

Result of a Winter Reliability Trial.

On the 22nd inst. the Exeter and District M.C.C. held a reliability trial to Penzance and back, a distance of 222 miles. Competitors, who rode in pairs, had to adhere to a speed of 18 m.p.h. The start was at 6 a.m., lamps having to be lit for the first 40 miles. The roads were found to be in a very bad condition, and sideslips were frequent. At Redruth the hon. secretary, A. M. Scott, skidded on the tramlines and unfortunately put out his knee. He pluckily continued to Land's End, and turned with the intention of finishing the run, but had perforce to retire at Bodmin, as riding had become painful. There was a stop of 1 hr. 40 min. at Penzance, the riders being checked at Taylor's garage. B. Rae (Douglas) retired on the return journey owing, it is said, to a broken crank pin. Those who arrived back at Exeter within schedule time, qualifying for medals, were: S. Williams (3½ h.p. Triumph), D. Moffat (2¾ h.p. Douglas) A. S. Western (3½ h.p. Kerry-Allingdon and sidecar), S. Saunders (3½ h.p. Clutch-Triumph), and E. Babington (3½ h.p. Bat-Jap). The following also finished: Saunders (Triumph), Milner (Bat), and Rendall (Triumph).

Hill-climb in Natal.

A recent hill-climb in Natal resulted in a double win for A. H. Christian on a 3½ h.p. Norton, who not only accomplished fastest time, but was first on formula also. The next five competitors in order of merit were: H. Archer (3½ Norton), R. O. Atcherly (3½ V.S.), O. E. Brown (3½ Triumph), F. Fabrian (3½ Wanderer), and G. S. Summerfield (3½ V.S.) Electrical timing was used.

Launching of H.M.S. "Thunderer."

On February 1st the new Dreadnought battleship, H.M.S. *Thunderer*, will be launched at the Canning Town Shipbuilding Yards of the Thames Ironworks and Shipbuilding Co., Ltd., by Mrs. Davidson, wife of the Archbishop of Canterbury. It is interesting to note that Mr. A. F. Hills, the well-known philanthropist, as well as being chairman of the Thames Ironworks, is also chairman of Zenith Motors, Ltd., which firm is arranging to take a motor coach load of guests from Trafalgar Square to the scene of the launching on Wednesday.

The Gritting of Street Surfaces

A conference was held on the 20th inst., between the Institution of Municipal and County Engineers, as representing the road engineers, and the Roads Improvement Association (Incptd.), as representing the road users on the question of the gritting of London streets. Mr. Robert Todd was elected to the chair. Evidence was given by the road users of the damage caused to rubber tyres by the gritting materials at present used. The ways and means of reducing the damaging effect of gritting to a minimum while maintaining a non-slipping surface for all types of traffic were fully discussed. Eventually a resolution was passed setting out certain principles for dealing with the difficulty which is to be submitted by the delegates to their respective organisations for confirmation, after which a further conference will be held.

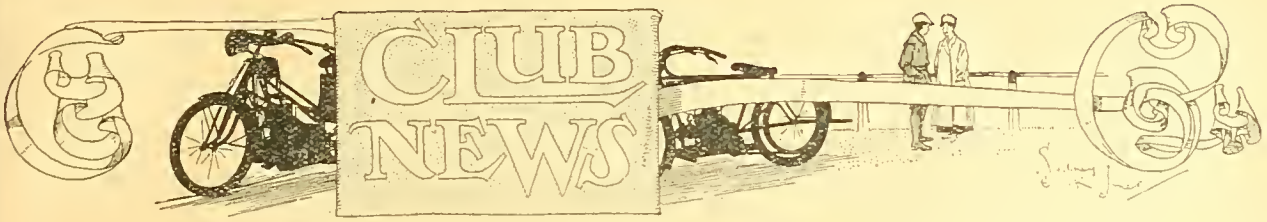
Criticism of the Quarterly Trial Course.

"Lightweight" (Croydon) writes: "After completing the course for the trials on Saturday, under the worst conditions, including fog and darkness, I have come to the conclusion that all the correspondence *re* Chalk Pit Hill is only in favour of giving the heavyweight machines a walkover, that is by sending them up Titsey Hill instead.

"For this trial I think that the A.C.U. is quite justified in including Chalk Pit Hill in the course.

"On the other hand, it is absolutely absurd to expect a lightweight machine to average 15 m.p.h. up any of the hills specified, and if the state of the roads is the same on Saturday as they were last week, then the 18-20 m.p.h. average is also too high

The turning point at Penzance in the Exeter M.C.C. trial to Land's End and back at the beginning of the week. (See paragraph on this page).



Glasgow M.C.C.

The first annual dinner and presentation of prizes will be held on February 16th. Tickets, 4s., may be obtained from Mr. A. Gordon Bostock, Students' Union, Glsagow University.

Sheffield and Hallamshire M.C.C.

To-night (January 26th) the club is holding a whist drive, at Hudson's Restaurant, Charles Street, commencing at 7.45 o'clock. The drive will be followed by a hot supper.

West Essex A.C.

The annual dinner of the above club will be held at the Liverpool Street Hotel on Saturday next, the 28th inst. Mr. B. Foster Wickens, the president, will take the chair, and Mrs. Wickens will present the prizes.

Birmingham M.C.C.

The Land's End competition for the Lycett twenty guinea challenge trophy and Austin cup, to be held at Whitsuntide, is attracting many new members; nine were elected at the last meeting. The smoking concert held on the 21st inst. was an unqualified success. There was a record attendance and a most excellent programme, thanks to Mr. S. K. Jones (a member) who made all arrangements.

Finsbury Park C.C. (M.C. Section).

At the annual general meeting of the Finsbury Park Cycling Club it was decided to form a motor cycle section. Readers who are interested should communicate with the assistant hon. sec., Mr. R. G. Barrett, 54, Florence Road, Stroud Green, N. The intention of the club is to form a social body not devoted solely to sporting events. Lady members are especially welcome.

Derby and District M.C.C.

The programme for 1911 (subject to alteration) is as follows:

February 11th.—Run to Leicester Motor Cycle Show.
April 14th.—Richmond Meeting of Motor Cyclists.
April 17th (Easter Monday).—North Wales.
May 6th.—Speed-judging Competition.
May 27th.—Petrol Consumption Trials.
June 5th.—Whitsuntide 100 Miles Reliability Trial.
June 31st.—Fast and Slow Hill Climb.
August 5th, 6th, and 7th.—Trial Run, Derby to Torquay and Return.
September.—Hill Climb.

It is hoped also to compete with the Leicester Club and the Motor Cycling Club in their team trials.

Streatham and District M.C.C.

The first annual dinner of the Streatham and District Motor Cycling Club was held at the Holborn Restaurant on the 18th inst., when Mr. Julian Orde presided over a large company. Amongst those present at Wednesday night's gathering were Messrs. H. P. E. Harding, F. Straight, H. G. and F. Ayers, R. Simmonds, R. G. Nye, J. W. G. Brooker, W. Pratt, Percy Talbot, H. Hunter, R. H. Gray, J. Austin, and the hon. sec., Mr. J. H. Jeffery.

In proposing the toast of the Streatham and District M.C.C. the Chairman said he was pleased to hear the membership of the club, although it had only been in existence a year, was sixty. They would be pleased to hear that a letter had been received from the Army Council thanking the club for the assistance it had rendered during the manœuvres last year. He hoped that the membership would increase this year, and he could not help remarking that the club owed its success to the excellent work of the hon. secretary, Mr. Jeffery—(applause)—who had devoted a great deal of his time to promote the success of the club. He had much pleasure in asking Mr. Jeffery to accept a medal which the members desired to give him as a mark of their appreciation of the way in which he had worked during the year.

Mr. Jeffery, in responding, congratulated the club on its success, of which he personally was very proud, and his one wish and desire was to see the membership doubled, and they would then be the strongest club in the Auto Cycle Union.

"The Chairman" was proposed by Mr. W. Pratt, and in responding Mr. Orde intimated that he would give a cup to be offered for competition in any way that the committee might wish.

During the evening the prizes won at the various competitions promoted by the club during the year were presented to the successful competitors. An excellent programme of music arranged by Mr. Percy Talbot followed and was much enjoyed.

A lecture will be given at the club's headquarters, Crown and Sceptre Hotel, Streatham Place, on the evening of January 23rd.

Cornwall M.C.C.

The first general meeting was held at the Red Lion Hotel, Truro, at 6.30 p.m., on the 21st inst. There was a very satisfactory attendance, officials were appointed, rules passed, and the agreement for affiliation to the A.C.U. was authorised. The next meeting will be in March.

Lincolnshire A.C. (Motor Cycle Section).

A meeting was held at the Spread Eagle, Lincoln, on the 19th inst., for the purpose of forming a motor cycle section of the Lincolnshire A.C. A very large number attended, and there seems every prospect of the newly-formed section being most successful. The hon. sec. is Mr. W. Howell Quine, Park Dale, St. Catherine's, Lincoln.

Mersey M.C.

The initial assembly of members of this club was in the form of a social, which was most successful. The company of fifty included a fair sprinkling of members of the Liverpool A.C.C. The cinematograph was provided free, and operated by the hon. treasurer, and a fire-proof chamber was erected to comply with Corporation regulations. The pictures shown comprised views of the light car races on the Continent, aeroplane flights, motor boat races, and those two grand sporting events—the 1910 T.T. Race and the Sutton Bank Hill-climb.

Edinburgh M.C.C.

This enterprising and successful club is endeavouring to effect an amalgamation with the other clubs in the locality so as to form one representative institution. The scheme includes club premises and the formation of a small limited company, the shares to be taken by founder members. The Scottish capital contains a large number of enthusiastic riders, and the proposed amalgamation should do good work in promoting the social and sporting sides of the pastime.

Coventry and Warwickshire M.C.

At a committee meeting last week Mr. Bernard Jones, the Drill Hall, Coventry, was appointed hon. secretary in place of Mr. Eric W. Walford, resigned, and Mr. Geoffrey Smith, 19, Hertford Street, Coventry, the trials hon. secretary. These appointments will be confirmed at the annual general meeting.

The following dates have been arranged for forthcoming events:

Tuesday, February 21st.—Annual dinner and prize distribution at St. Mary's Hall.
Friday, March 10th.—Annual general meeting.
Saturday, March 11th.—Opening run.
Saturday, June 24th.—Annual Welsh run. Stopping place for night, Aberystwyth.

Club News.—

Liverpool A.C.C.

A smoking concert has been fixed for the 31st inst., when all Liverpool motor cyclists are cordially invited, and will be welcomed.

Newcastle M.C.

Mr. A. J. Hurst will deliver a lecture with limelight illustrations entitled "A Scamper through Holland" before the members of the club at the Literary and Philosophical Society, Newcastle, on 3rd February at 8 p.m.

Cardiff M.C.

The annual dinner of this club was held at the Whitehall Rooms, Park Hotel, Cardiff, on the 19th inst., when Lord Ninian Crichton Stewart, M.P., presided over a fashionable gathering, which included a large number of well-known public men and motorists, and several ladies.

In replying to the toast of "The City of Cardiff," eloquently proposed by Mr. F. C. Shackell, the Lord Mayor testified to the considerate and careful driving of motorists in the borough, and to the great benefits which were derived from the presence of motorists there.

Mr. Councillor J. W. Courtis proposed the toast of "Motoring," and, in referring to the fusion of the Automobile Association and the Motor Union, said he hoped that the new body would devote its first attention to the heavy and unfair taxes to which motorists were now being subjected.

Mr. Stenson Cooke, in responding, spoke of the large income of the amalgamated bodies, and of the proportion subscribed by the affiliated, or, as he preferred to call them, federated clubs. He said that the organisation did not desire to govern motorists, but only to help and fight for them, whether it be in Parliament or the Law Courts.

Lord Ninian Stewart then distributed the prizes won by the members in the various competitions held during the year, and, in responding to the toast of the club, paid a fitting and well-deserved tribute to the services of Mr. Jotham, the hon. secretary.

An excellent programme of music was provided during the evening by Mr. W. A. J. Kelly's talented orchestra.

Surrey M.C.C.

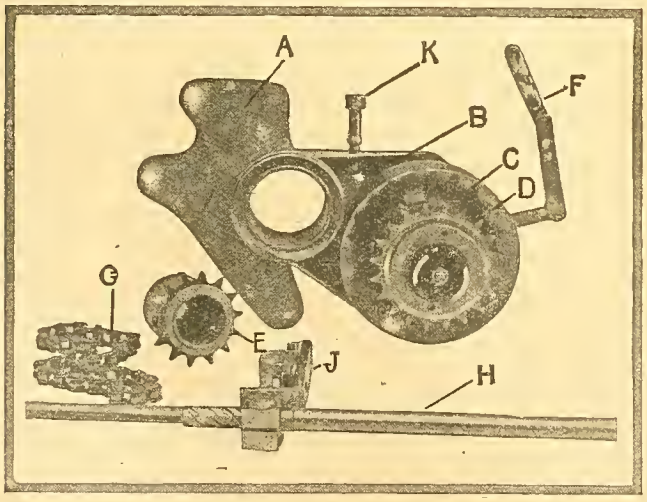
The fourth annual general meeting of this club was held at the Angel Hotel, Guildford, on Friday, the 20th inst., when the report and balance-sheet for the past year were presented and officers and committee for 1911 elected.

In presenting the annual report, the secretary drew attention to the gratifying increase of members and the satisfactory financial condition of the club. The club has in hand a balance of £8 14s., and the balance-sheet shows a substantial surplus over all liabilities.

Members are desired to note that Mr. A. E. Bennett, of the Bosch Magneto Co., Ltd., will give a lecture, illustrated with lantern slides, on "Magneto Electric Ignition," at the club's headquarters, on Friday, the 3rd prox., at 8.30 p.m.

A NEW VARIABLE GEAR.

MR. MABON, whose plate clutch has largely contributed to the popularity of free engine devices, has been engaged for a considerable period at his works, 54, High Road, North Finchley, N., in perfecting a variable gear which is simple, reliable, and efficient, and can be fitted to most standard models without alteration. As will be seen by the illustration, the gear is built up on two plates A and B, of which A is bolted to the crank case and B is free to move radially about a central boss through which the engine-shaft runs. On the engine-shaft is keyed the small sprocket.

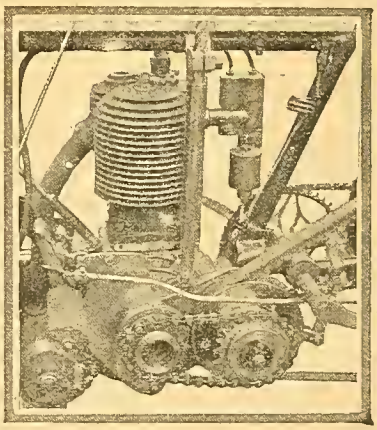


Details of the Mabon variable gear.

A. Plate fixed to crank case.
B. Movable plate.
C. Belt pulley.
D. Large sprocket.
E. Small sprocket.
F. Arm on operating device locked to frame.
G. Driving chain.
H. Operating rod with quick pitch thread.
J. Clip fastened to middle tube of frame.
K. Control rod union.

The movable plate B carries on a short counter-shaft an expanding belt pulley C, and another sprocket D slightly larger than E. The belt pulley is provided with two inclined planes, one of which is anchored to the frame of the machine by means of the arm F. The gear is operated by means of the rod H, on which is a quick pitch thread which runs through part of the long clip J attached to the middle tube of the frame, and to a convenient bolt on the engine crank case. On the top of the control rod is a handle within easy reach of the rider which moves the gear over its fullest range in describing a semi-circle. The movement of this rod raises or lowers the movable plate, and at the same time contracts and expands the pulley, thus altering the gear and keeping the belt tension the same throughout. The free engine position is obtained by expanding the pulley to its utmost and allowing the belt to ride on a loose ring. Pairs of sprockets in two different sizes can be supplied, giving gears between 4 and 6¾ to 1, and between 5 and 7½ to 1 respectively.

The following are some of the advantages claimed. Though the belt drive is slightly shortened, the pulley is of large diameter even on the lowest gear. The whole ratio can be easily altered by changing the sprockets. There is no end thrust on the engine; the control lever handle can be raised or lowered to suit the convenience of the driver. The gear can be fitted to a number of standard makes of motor bicycles with 500 c.c. engines, and is the outcome of much thought and many careful road experiments.



The Mabon variable gear, with combined chain and belt transmission for fitting to standard pattern machines without alteration.

Mr. Mabon has lately introduced a slightly altered form of his already excellent clutch which will be known as the Export Model. The chief alteration is in the driving mechanism. In the former models a fork was employed, but in the Export Model the withdrawal is effected by means of inclined planes controlled by a long lever. Anyone can fit this clutch with the aid of a box spanner and a screwdriver, while the new withdrawal mechanism works with the greatest ease owing to the long leverage.

Variable Gears & Slipping Clutches.

By JOHN L. MILLIGAN, B.Sc.

JUDGING from frequent enquiries and letters in the columns of this journal, there seems to be a good deal of misapprehension among motor cyclists as to the correct function of a variable gear aud of a slipping clutch. Some have even gone so far as to contend that a well designed slipping clutch can perform the dual purpose, rendering a variable gear unnecessary. This is an exaggerated view.

The diagram below shows two sets of curves. The full ones show the pull necessary to move a motor cycle and rider weighing 300 lbs. at speeds up to forty miles per hour (1) on the level, (2) on 1 in 20 gradient, and (3) on 1 in 10 gradient.

The broken lines represent the mean pull on the machine due to the engine power at various gear ratios—4, 4½, 5, and 8 to 1. The values are for a high-class 500 c.c. engine.

It will be noticed that this curve, known as a "torque" curve, rises to a maximum value, remains almost steady, then falls away, slowly at first, then very rapidly.

The part below the maximum value is known as the unstable part of the curve, as any slowing down reduces the pull if the resistance is nearly constant, as it is when the speed is slow. This means that a slight increase of resistance, or a slight fall in power developed, starts the speed on a downward course, from which it cannot recover. The energy stored by a heavy flywheel may get over temporary increases in resistance, and prevent this stopping, but it cannot help the engine to "pick up."

Surplus Engine Pull.

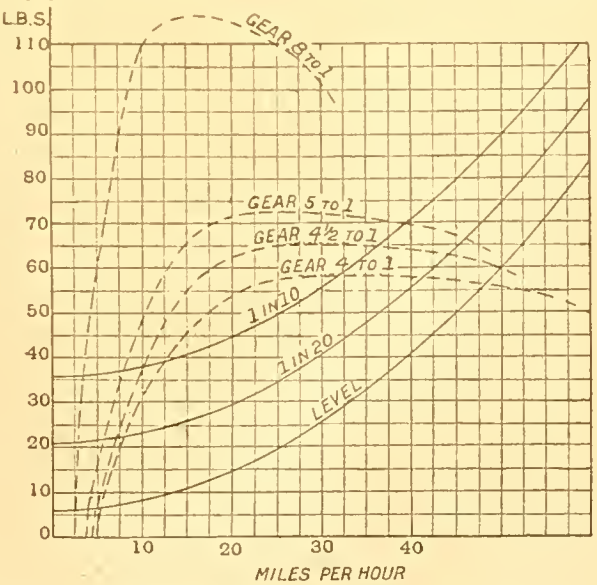
It will be noticed that for a 4 to 1 gear the pull is sufficient to overcome the resistance at all speeds from 13 to 32 miles per hour up a hill 1 in 10, but the critical point is at 25 m.p.h., at which speed there is the largest surplus of pull over resistance. This surplus pull causes the machine to pick up, and if the hill were long and the engine did not overheat the limit of 32 m.p.h. would be reached, but overheating would reduce the engine pull, and if this occurred at 32 m.p.h. the machine would slow down till the new limit was reached. If, on the other hand, overheating took place at the lower limit, the engine would slow down, but the limit of speed would rise. It is this difficulty of climbing hills slowly which necessitates the use of variable gears and slipping clutches.

By varying the gear to the other values shown the critical speed is reduced, and at the same time the pull of the engine is increased. There is less chance of the engine stopping and there is more surplus pull available. The maximum speed may actually be raised in some cases by lowering the gear, *e.g.*, a machine geared 2 to 1 is not necessarily faster on Brooklands than one geared 5 to 1.

Limitations of a Slipping Clutch.

A slipping clutch has the same twisting moment on its driving and driven shafts, neither more nor less, and therefore the loss of power is the same percentage as the loss of speed. If half the speed is slipped, then half the horse-power is being converted into heat in the clutch.

By keeping the engine running at a speed where its pull is about the maximum, the clutch may be slipped so that this pull is available at any speed up to the engine speed, but no more than the engine pull is available. Thus if the engine (see diagram) with 4 to 1 gear is being run at a speed corresponding to thirty miles per hour, and the clutch slipped to allow the machine to run at thirteen miles per hour, the available pull will be 58 lbs. instead of 39 lbs. Furthermore, this 58 lbs. is at a stable velocity, the 39 lbs. being a pull at an unstable velocity where a slight falling off in the pull would be followed by the stoppage of the machine.



If a variable gear giving 4 and 5 to 1 ratios were fitted, the available pull would be 58 lbs. also, but at a speed not very stable, as it is on the wrong side of the maximum.

Variable Gears and Slipping Clutches.—

By using a ratio of 8 to 1, 116 lbs. pull is available at thirteen miles per hour, which leaves a good margin for accelerating, and, as it is approximately the maximum pull, the engine can be slowed down with some reasonable hope that it will not give up work.

By slipping the clutch with a 5 to 1 gear, 72 lbs. pull is available at thirteen miles per hour.

Heat Generated by Slipping Clutches.

A change-speed gear with positive ratios, that is, minus a clutch which permits slip, is of very little use for climbing hills with traffic on them, and may even be inferior to a single-geared machine with a friction clutch. But when one considers the difficulty of cooling the engine, even with the provision of large radiating surfaces and well designed ribs, it is evident that there is no clutch at present on the market which is capable of being slipped for any considerable period giving out, say, 50% of the power of the engine.

The amount of heat passing through the cylinder walls and fins is about equal to the power delivered to the shaft. If the cooling arrangements of a modern engine are necessary to dissipate this heat, the absence of any provision for cooling clutches (which, to be of any service as slipping clutches, must get rid of, perhaps, half the amount the cylinder disposes of) makes one doubt if any clutch at present on the market is capable of continuous slipping for more than a minute. But to make a clutch which would be really effective as a slipping clutch for long hills, would require at least as much room and much more expense than a proper variable gear with a clutch capable of slipping for short periods to enable the engine to pick up. Consequently it is difficult to see how any form of slipping medium can displace the variable gear.

PASSENGER MOTOR CYCLES.

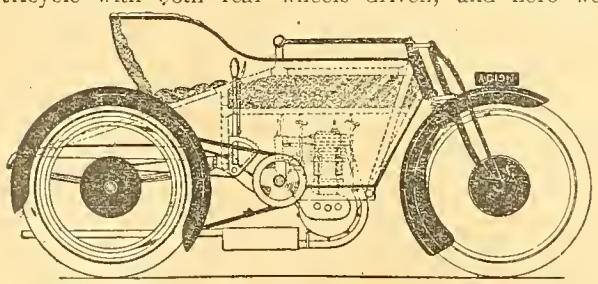
A SUGGESTED THREE-WHEELER.

By PRECENTAUR.

THERE is a market waiting for a new type of self-contained passenger motor cycle. The sidecar, as all who have tried it are aware, is an excellent combination, but a complete vehicle is preferred by many. Then it has one fault in common with the tricar, not so serious perhaps in practice, but always present—the drive is on one wheel. The quadricycle or four-wheeled type is, in my opinion, put out of court, as it is, for taxation purposes, a motor car, and this leaves us only three wheels to deal with. There may be possibilities in the tricycle with the front wheel for driving and steering, but I am inclined to think that the objections that apply to the rear wheel of a tricar or sidecar would be found in full force on a wheel which drives and steers also.

A Differential Gear Not Essential.

The machine, then, to which we must turn is a tricycle with both rear wheels driven, and here we meet the supposed need for a differential gear, which is an expensive item. However, that a differential gear is not absolutely essential has been proved on racing cars, and in the design which I propose to outline the lack of this gear would prove no drawback. If the specification which follows is insufficient to enable readers to form a mental picture of the vehicle, possibly the accompanying sketches may assist towards that end.



"Precentaur's" suggested design of three-wheeled passenger motor cycle.

First, then, as to frame. This is a combination of pressed steel (or channel steel) and tubing. The side members are of channel steel with tubular cross members, this combination being one which is strong, light, rigid enough to meet all requirements, and, if made in sufficient quantity, cheap. Dumb-irons for the rear springs are formed on the frame, and bushes are inserted in the side members for the front shackles of the springs. The springs are shackled at the forward end only, and as the whole is to be light and low in price no radius rods are fitted, nor are they necessary. If desired, the channel steel side members may be upswept at the rear, but with 26in. or 28in. wheels this is not really necessary.

The side members converge towards the front and are joined by a tubular cross stay; a cross stay is fitted at the rear end of the frame, and this may be either tubular or of channel section. Other cross stays are tubular, and are fitted in convenient positions for carrying the engine and counter-shaft.

Single Front Steering Wheel.

The single front steering wheel is carried in a spring front fork of the usual type—say a Druid—and this fork is similar in strength to that fitted to sidecar machines. The ball head and upper frame are similar in design and construction to the frame of a motor bicycle, the tank being similar also if desired. It may be found cheaper to fit the tank on a dashboard or behind the seats, so I will not dogmatise on this point.

Steering is by handle-bar, of special design, or tiller steering may be easily arranged. Controls are the same as for a motor bicycle, a front brake, applied to the rim or hub, being fitted to the front wheel.

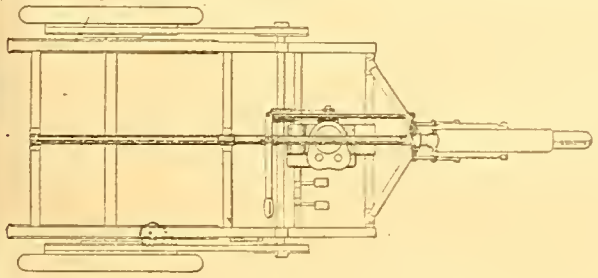
The engine may be either a single cylinder or a twin, power 4½ to 7 h.p. The usual system of attachment to the frame is adopted, preference being given to some attachment similar to that used on the Arno machines, by which the engine and its fundamental parts may be slid sideways out of the frame.

The Method of Driving.

Now as regards transmission. Behind the engine is a counter-shaft mounted on four ball bearings. These bearings are mounted on a cradle plate that is

Passenger Motor Cycles.—

bolted to the frame, with provision made for sliding it to, or from, the engine. On the engine-shaft are two sprockets of different sizes, and on the counter-shaft are two others, loosely mounted thereon, and designed so that either may be locked to the counter-shaft by means of dog clutches. One pair of sprockets gives the high gear and the other the low gear, and when one is clutched to the counter-shaft the other is free to run idly. An intermediate position gives the neutral.



Plan view of the suggested design, with side-by-side seats.

The final drive from the counter-shaft to the rear wheels is by V belts, preferably of the Whittle type, and as a reduction of the gear has been made between the engine and counter-shaft the front pulleys may be of extra large size, say 8in. diameter, or even larger. The size of the front pulley largely depends on the gear reduction between the engine and counter-shaft, say 2½ to 1 for high gear and 4 to 1 for the low gear. The reduction between the counter-shaft and rear wheels with 8in. pulleys is a further 2⅜ to 1 with 19in. belt rims, giving a ratio between engine and back wheel of 5⅛ to 1 top and 9½ to 1 low gear, which could be raised or still further reduced if desired. Each of the counter-shaft pulleys is designed with a sliding flange, and by means of cables these pulleys may be opened out or closed, giving a reduction of gear until the belt runs on a free ring at the bottom of the pulley and a free engine is obtained. For starting a handle is engaged with the counter-shaft end, the low gear sprocket locked to the counter-shaft, and the belt pulleys opened out to the full. The engine is then started, the pulleys gradually closed up, the belts take up the drive, and when the machine is on the move the high speed dog clutch is engaged. The adjustable pulleys are operated by a pedal, and another pedal controls brakes acting on the belt rims. If desired a second pair of brake shoes might be fitted as reserve brakes, operated by a side hand lever.

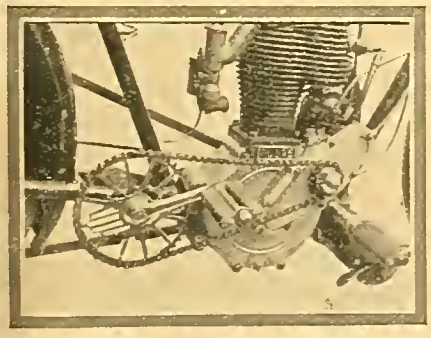
Cost of Construction.

The body is on the lines of a two-seated car, and a screen and hood can be easily fitted. With a plainly constructed body, 2½in. tyres, and 6 h.p. twin engine, a three-wheeler might be built on the lines indicated to sell at about £60; with refinements of body building, wind screen, hood, etc., perhaps another £10 might be added, while with a 4½ h.p. engine the price could be still further reduced. The majority of the parts are standard and easily obtainable, the only exceptions being the adjustable pulleys (which would have to be specially made, but should not be a very expensive item), and the pressed steel side members of the frame, which are not difficult to obtain. Mudguards and similar details are not included in the sketches, their construction being quite obvious and presenting no difficulty.

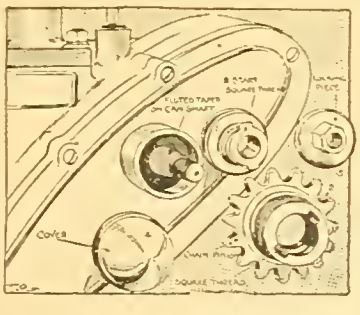
A NEW FORM OF PEDAL-STARTING GEAR.

AN ingenious and effective form of engine starting gear is now being fitted to the free engine model Rudge-Whitworth motor cycles, enabling the engine to be started with a dig of the pedal with the rear wheel resting on the ground. The device is perfectly simple, consisting of a small conical friction clutch on the camshaft which is worked by ordinary chain and pedal gear. The component parts of the device are clearly shown in fig. 2, the numbers on the drawing corresponding to the way in which they fit together on the camshaft. The clutch itself consists of a fluted hardened cone on the end of the camshaft which engages with a corresponding tapered hole in the centre of a bush, also hardened. The bush is thrown in and out of engagement with the camshaft by the lateral movement of a two start square thread, which forces the two tapered surfaces together with sufficient contact friction to start the engine on the forward stroke of the pedals. On the reverse stroke the square thread disengages the clutch by unscrewing the bush.

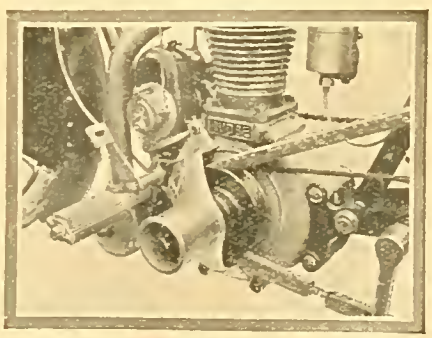
Fig. 3 shows another addition made to the clutch model Rudge. It is an aluminium guard to prevent the rider's foot fouling the clutch mechanism. It also serves the extra purpose of warding off mud and dirt from the clutch mechanism, as also the driving belt. A machine with the fittings described will be ridden by C. S. Burney in the Quarterly Trials on Saturday.



(1) The pedalling gear and chain connected direct to camshaft.



(2) The various parts of the Rudge pedal starting clutch gear dismantled.



(3) Cover preventing the rider's heel touching the clutch, also rendering the latter dirt proof.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Registration. 3½ h.p. Motor Cycles.

As an intending motor cyclist I should be much obliged if you would be so kind as to answer the following question: (1.) Could I register my machine in any county without actually going there myself or taking the machine? If so, where could I register so as to obtain a small number? (2.) Do you think a 3½ h.p. Calthorpe is an efficient machine, or a good one for a beginner? (3.) Would the above machine take a sidecar up reasonable hills without a two-speed, but geared low?—B.G.

(1.) You may register your machine in any county you like, and the whole affair may be carried out by letter. All you have to do is to write to the clerk of the county or borough council to which you intend to apply. Small numbers may be obtained in the following Irish counties: Clare, Donegal, Fermanagh, Limerick, and Kings County. (2.) Although we have had no personal experience with the machine in question, it has proved its reliability in competitions. (3.) A change speed gear would be practically indispensable if you wish to do any serious touring, though a good deal of fun and enjoyment can be got out of a single-geared machine of this horse-power, provided the passengers' weights are not unduly high, and the district not exceptionally hilly.

Suiting a Magneto to the Engine.

I intend turning my 5 h.p. Peugeot-engined tricar into a bicycle, and would like to buy a good second-hand magneto for it. (1.) Will any kind do for my 1906 5 h.p. twin Peugeot? Does it matter about angle of cylinders? (2.) I noticed a second-hand Ruthardt advertised the other day. Would it do? (3.) What advice can you give me in buying one?—C.D.

(1.) It matters very much about the angle of the cylinders, and in advertising for a magneto you should specially stipulate for a magneto for V type twin, and the angle at which the cylinders are set, which is about 45° in the case of the Peugeot. (2.) It depends whether it is for a V-type twin similar to yours. (3.) Obtain a good make, and have it examined or reported upon by the makers if you cannot see it in action.

Cure for Flooding Carburetter.

I have a 1¾ h.p. F.N. on which I can only average about eighty miles per gallon. On the road the carburetter is always flooded and dripping. Can you advise me how to remedy this?—A.G.

Probably the needle valve requires to be ground in. Any mechanic would remedy this trouble for you at a very small cost. Or, if you prefer to cure it personally, obtain a small quantity of crocus powder from a chemist and carefully grind the point into the seating until it prevents petrol leaking through. Do not grind in more than necessary, or it will necessitate the level being altered also. Excessive vibration of the needle would also cause the trouble, and if our suggestion does not effect a cure, you can solder a right angle slip of tin on to the float chamber, so that it allows the needle just room to rise sufficiently to admit the petrol, but not to jog up and down continually. This is a frequent cure for flooding and waste of petrol.

A. V. Deacock mounted on a twin-cylinder Wanderer, on which make of machine he was singularly successful at Brooklands and elsewhere during 1910. The Wanderer is a motor cycle which deserves to be better known, for it is fast, an excellent hill-climber, and not unduly heavy.

Starting Difficulties.

Q. My machine, 2¾ h.p. Minerva, coil and accumulator ignition, and fitted with an old-fashioned Brown and Barlow (not H.B. control) carburetter, is very hard to start. I have to run it perhaps 100 yards or more before getting off. Ignition is not at fault, as I have examined plug, contact breaker, etc. Would it be practicable to plug up one of the main air holes with cork, and if I did this would the engine get too hot for want of air?—M.McB.

If you fit a shutter to control the main air supply on the carburetter and close or partially close this before starting you will cure the trouble. If the carburetter is adjusted rather on the weak side the engine will not overheat if you reduce the air supply.

Grinding Valves.

Q. While trying to grind in my exhaust valve with emery powder, I notice that, instead of turning it smoothly, there are complete rings round both valve and seat. Could you please advise me how to remedy this? What sort of grinding powder would you recommend me to use?—D.J.W.

It is a good idea to insert an old automatic inlet valve spring underneath the exhaust valve, so that when you are grinding it in you can release the pressure from time to time, when the valve will be lifted from its seating by the action of the spring, and thus prevent rings being formed. Better than the grinding powder is Richford's grinding paste, sold by Messrs. Richford and Co., 153, Fleet Street, E.C.

Advancing and Retarding Spark.

Q. (1.) Is it advisable to use butt-ended tubes in both wheels, or will one in the back wheel be sufficient? (2.) With regard to the question of advancing or retarding the spark, your book, "Motor Cycles and How to Manage Them," certainly tells one when to advance or retard the spark, but it does not say why one ought to do it, nor what is the result of doing so, and it is these two points that I want to clearly understand?—R.H.U.E.

(1.) It would be better to have butt-ended tubes in both wheels. (2.) With regard to the effect of advancing the spark, it is fairly obvious that when the spark is retarded the explosion takes place after the piston has reached the top of the compression stroke, with the result that the compression is not at its highest, and, in consequence, the explosion is considerably weaker, and, as a natural result, the combustion is not so perfect if the explosion is fired with the retarded spark as if the spark were fully advanced. With the spark fully advanced the explosion takes place immediately before the highest degree of compression is reached—before, because the charge takes an appreciable time to ignite. The result is that the highest degree of efficiency is obtained under these conditions.

Poor Compression.

Q. I should be much obliged if you could explain to me the probable reason for the curious behaviour of my motor cycle engine. When the engine is all cold the compression is fairly good, but after running a couple of minutes on the stand the compression seems very poor, and the crank case is too warm to touch. Might this be a matter of the lubricating oil being too thin, or is it more likely to be worn rings? These latter, I may say, seem quite bright and polished all round. If new rings are required, is it better to send piston and cylinder to a reliable firm than to attempt to fit them myself?—R.M.

Very likely the trouble is partly due to the lubricating oil being too thin. It is naturally thicker when it is cold, and gives rather a false idea of the compression. Very often the trouble you detail is accounted for by the valve seatings or valve stems being out of truth. Unless the crank case gets excessively hot you need not trouble, as the heat there may be only due to conduction. If the engine is an old one, and you seem to think that a new piston and rings will be necessary, it would be advisable to send the piston, rings, and cylinder to a reliable firm for attention. Regrinding the cylinder is not a novice's job. The fitting of new rings, however, is quite a simple matter. After removing the old rings take three strips of tin and place them round the cylinder at equal intervals. You can then lead on the rings gently without fear of breaking them. Oil the piston and other parts before replacing the cylinder.

Anti-freezing Mixtures.

Q. (1.) What is the most effective and economical way to keep cooling water from freezing on a tricar? What proportion of the medium should I want to the gallon? (2.) Is fifty per cent. castor and fifty per cent. water-cooled oil mixed better for a 6 h.p. single-cylinder engine than all water-cooled oil?—O.R

(1.) The most effective and economical way is to let out the water in time of frost. We always do this when using a water-cooled machine in preference to using an anti-freezing mixture. However, a ten per cent. mixture of glycerine is commonly used. (2.) We should recommend you to use the best quality water-cooled oil.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"H.W." (Ascot). The T.A.C. four-cylinder.

"K.B." (Nottingham). The Scott (two stroke), particularly with regard to reliability and engine difficulties.

"X." (Nahan, Punjab). The Scott two-stroke motor bicycle, also cost of exporting, including all useful accessories and spares?

"G.B." (Norwich). Mabon clutch fitted to Triumph motor bicycle, particularly as to starting from standstill, and riding in traffic.

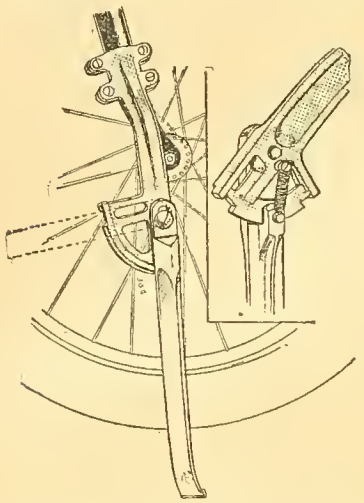
"Medicus" (Bridge of Allan). Lowen two wheeled sidecar, particularly as regards comfort and ease of steering.

MOTOR CYCLE v. AEROPLANE IN U.S.A.

A thrilling race between an aeroplane and L. S. Taylor on an Emblem motor cycle. The race took place at the mile dirt track at Columbus, Ohio, and the motor cyclist defeated the airman after a thrilling contest, which was greatly enjoyed by the spectators, who cheered the contestants throughout.

A New Front Wheel Stand.

Messrs. Price and Co., Rosebery Avenue, the well-known manufacturers of motor cycle stands, have lately introduced a front wheel stand, working on the same lines as the Ukantes rear stand. The legs are clipped round the ends of the front forks, and when the stand is out of action the legs come level with the front wheel rim, and are, in consequence, completely out of the way. To place the stand in action it is only necessary to



pull the legs outwards and slide them round until the lower of the two slots in the quadrant is reached, into which they drop and remain firmly in position.

A Free Gift.

J. T. Cairns, 144, London Road, Preston, is making a free present of a Parker headlight and separate generator to every purchaser of a sidecar.

A Sidecar Catalogue.

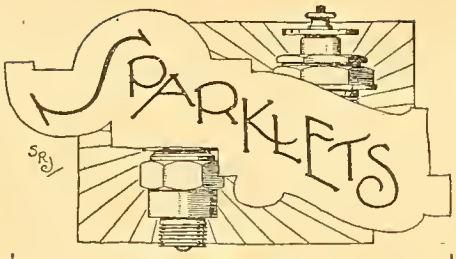
Mills-Fulford, Crown Works, Coventry, have prepared an interesting catalogue of Millford specialities, which include the various patterns of sidecars, such as the Millford radial castor wheel sidecar, the ordinary castor wheel pattern, the spring wheel, and the rigid sidecars. The booklet also contains instructions for fitting.

A Motor Cycle Garage at Banbury.

The business which has been established for twelve years by Messrs. H. Coley and Co. has been purchased by Wrench's Garage (The Electric and Motor Co.), 3, Horsefair, Banbury. Mr. H. A. Beard, who was formerly the manager of Messrs. Coley and Co., will especially look after the interests of motor cyclists.

M.M. Motor Cycles.

All 1911 M.M. motor bicycles, which are handled by Messrs. J. C. Lyell and Co., 113, Great Portland Street, W., will be fitted with free engine clutches. The M.M. clutch is contained in the engine pulley. It works on the principle of the internal expanding brake. The expanding brake is of steel, and is lined with Raybestos material. It is extremely simple, should work well, and will stand any amount of slipping.



Insurance.

Ernest J. Bass, the well-known motor insurance broker, has moved his country address to Bishop's Stortford, Herts, his city address being 12, Poultry, E.C. His latest motor cycle prospectuses should be seen by all motor cyclists.

A Matchbox Cover.

All purchasers of goods amounting to 5s. from C. H. Hitchen, Euston Road, Morecambe, are handed a useful little matchbox cover intended to protect the ordinary household matchbox from injury, and render it more sightly in appearance.

A Successful Tyre Co.

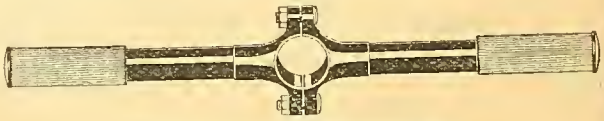
The Rom Tyre and Rubber Co., Ltd., 31, Brook Street, Holborn, E.C., inform us that their turnover for the financial year is in excess of the previous year, and, despite the high price of rubber prevalent during the greater portion of 1909, a net profit of £3,463 12s. 8d. has been made, the whole of which amount has been carried forward to the ensuing year.

Bohemian Concert.

The third annual Bohemian concert, under the auspices of A. W. Gamage, Ltd., will be held on Tuesday, February 7th, at the Holborn Restaurant. Mr. A. W. Gamage will occupy the chair. Ladies are specially invited.

Low-priced Footrests.

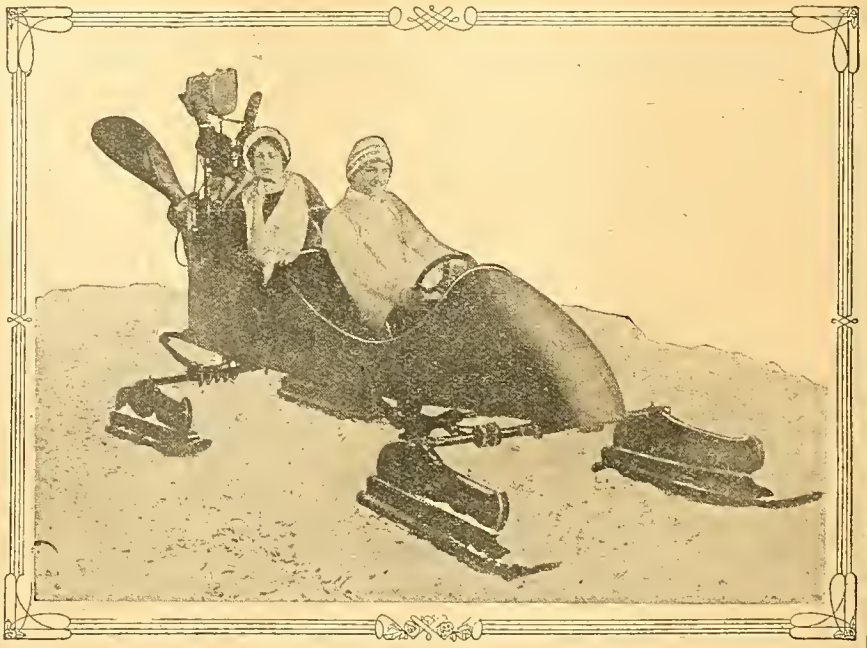
The accompanying illustration is that of a pair of footrests which have just been introduced by Maude's Motor Mart, 136, Great Portland Street, W. As will be seen, the footrests are extremely simple, consisting of a clip for attachment to the down tube and two tubular extensions, the portions where the feet rest being covered with fluted india-rubber piping, and ends finished off with plated caps. Riders owning machines unprovided with footrests will find the article illustrated a useful addition, which can be purchased at a very moderate figure.



Footrests sold by Maude's Motor Mart.

A New Carburetter.

The success of the Solex carburetter for motor cycles has led to Messrs. S. Wolf and Co., of 138, Southwark Street, Blackfriars Bridge, S.E., receiving numerous applications for sole agencies in various districts in the United Kingdom, and arrangements have now been made whereby this firm is in a position to entertain applications from garages and agents for the sale and fitting of this promising carburetter. Further information can be obtained from the above address.



A MOTOR SLEIGH-CUM-MOTOR CYCLE-CUM-AEROPLANE.

A wonderful assemblage of constituent parts of the various machines above-named are embodied in the new motor sleigh illustrated. It was made in the Motor School at Mainz, Germany, and is driven by an air-cooled engine with aeroplane propeller attached and steered like a car.

THE MOTOR CYCLE

Vol. 9. No. 410. Feb. 2nd, 1911.

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

The Problem of the Runabout.

THERE has been a certain amount of talk lately about a four-wheeled vehicle for one which is to cost no more than a motor bicycle, is to have more stability, and therefore to be free from those possibilities of side-slip to which the two-wheeler is at present prone. Moreover, it is to be more comfortable, is more suitable for use in winter as the driver can be properly wrapped up. However crude may be its design, it is a motor car within the meaning of the Act, but it apes to be a motor cycle. It has wire wheels, belt drive, an air-cooled engine, its price is cut down to the uttermost farthing, and it has as few complications as possible so as to render it as unsuitable to be a go-anywhere-you-please machine as anyone can imagine. For this type of machine there can never be much demand, while motor bicycles, which fill the bill, are being rapidly brought nearer to perfection.

With regard to the passenger machine, we who have gone through the many stages of the self-contained passenger motor cycle from its quad form in 1900 to the tricar of 1907 have always thought that for a passenger form of motor cycle there is a future for a connecting link between the motor cycle and the motor car, provided the link adopts the quad form of seating. Apart from the legal aspect, it is when all the wheels are sprung, a two-seated side by side body added, with other car features, that the vehicle ceases to be a motor cycle and becomes a motor car. The tricar at its zenith was positively driven, had a water-cooled engine, three-speed and reverse gear box, and became so much a motor car that its price killed it. The question now arises, is it possible with modern improvements to overcome the old difficulties which the quad and tricar pioneers went through in the past? In the first place, on most of the designs which have been brought to our notice the engine is air-cooled. Our long experience teaches us that this works well for a time, but owing to its hard work on high and low gears the engine will wear out quickly, and needs to be taken down and cleaned much more frequently than a bicycle motor.

Belt drive is fairly troublesome on sidecar combinations, and how much more so on a heavier four-wheeled runabout it is only possible to conjecture. It is true that on some of these vehicles it is proposed to use two belts. Mr. J. Van Hooydonk, one of the leading motor cycle engineers in the pioneer days, tried the experiment in 1903, and a couple of years later, in a lecture before the Auto Cycle Union, mentioned that in his early attempts to solve the transmission problem on passenger vehicles he had first used one belt, had found trouble with this, and in the first A.C.U. Trials used two belts; then he found double trouble, so he came to use a chain and found no trouble. However, belts have changed for the better since that time, and the double belt in the instance referred to drove on one side of a single wheel. The double drive more recently introduced is arranged on each side of the vehicle, and the belts drive separate wheels. This now leads one to suppose that a passenger vehicle which has four wheels is equipped insufficiently if it be fitted with an air-cooled motor cycle engine, and therefore water-cooling is desirable, if not absolutely necessary. So also it would probably be better if chain-driven. Chains, if properly protected and well lubricated, give no trouble, and are a most efficient form of drive for hard work. Now we come to the question of variable

gearing. Such a form of change speed which necessitates removing the belts from the normal on to a smaller pulley at the foot of the hill which it may be conjectured will need a low gear is hardly, in our opinion at least, an ideal form of varying the gear ratio. With a positive drive a gear giving at least two speeds is indispensable, as also is a good friction clutch, while, of course, the connoisseur will state that nothing less than three speeds will suit him. To reduce expense no differential is fitted. Consequently the machine on which the power of the engine is *efficiently* transmitted *must drive only one wheel.* This brings us back to the old tricar, with an extra wheel to raise the tax from £1 to two guineas, though, of course, the four-wheeler has the advantage of having all its tyres equally accessible. We started at about £75, but with the addition of mere necessaries it has risen to about £90; add the very meanest of "luxuries" and the price is £100. Now a 6 h.p. small car in good order will cost about £60 second-hand, so the motor cycle type of runabout with side by side seats will have to be produced very cheaply to compete with the second-hand small car.

The motor cycle runabout must possess two qualities to be successful—firstly, it must be cheap; secondly, it must be a go-anywhere machine.

Can it answer both these requirements? It has never been the policy of *The Motor Cycle* to decry enterprise, but we do ask makers to consider carefully what they are doing and the public what they are considering buying, as at present we cannot see how the passenger motor cycle runabout in its present form will benefit either. Made on the lines of the old quadricycle, with a motor cycle saddle for the driver and a light seat for the passenger in front, and so designed that it did not cost very much more than a motor bicycle and sidecar, we think there would be a certain demand for it, but even then the number sold would be necessarily limited, as its users would at once cry out for more comfort.

SPORTSMAN OR POTTERER?

"Ixion's" Rejoinder to his Critics.

IN *The Motor Cycle* of December 29th I wrote a brief article in which I suggested to the trade that the general public's ideal of a perfect motor cycle was "a sort of two-wheeled perpetual motion perambulator." I appealed to the trade and to the sporting type of dare-devil rider to greet the man who worships this ideal as a man and a brother; and I pleaded guilty to a sneaking fondness for a more whimsical mount for my own personal riding.

In response a perfect storm of vituperation has descended upon my devoted head, and curiously enough the bulk of it comes from the very type of rider whose interests I was voicing, as I have consistently voiced them for eight years past. I suppose my classification has struck him as odious. He claims a more dignified title than that of "potterer." He certainly has a right to a more stately title. Let him christen himself a "rational tourist," if he prefers—I shall not object. The line of demarcation is not strong, as literary vigour is compelled to represent.

No Hard and Fast Line.

Practically, neither potterers nor sportsmen exist, as mutually exclusive classes. When I try Bashall's latest road-eater, I am a "sportsman"; when de Lissa coaxes me to amble out on the newest Motosacoche, I become for the nonce a "potterer"; and possibly on each occasion my mood is in lurid contrast with my mount. The point is whether the rational touring type or the tearaway semi-racer is to be encouraged.

Up till quite recent times motor cycling has been the hobby of the individuals I described as sportsmen; that is of men who expected trouble, enjoyed trouble, and were not discouraged by trouble. During this period the industry has not been remarkably remunerative to the makers or the agents.

Nowadays for the first time thousands of individuals are taking up the pastime or are on the point of entering it, who do not expect trouble, who will be extremely aggravated if it comes their way, and who will sell the machine and curse motor cycling roundly if they encounter any serious trouble.

It cannot be pretended that the old ideals will weather the change. The new motor cyclist demands with no uncertain voice a two-wheeled perpetual motion perambulator, and we have got to give it to him; when it materialises, it will closely resemble the specification I sketched.

How Not to Encourage the Tyro.

A subsidiary point in my article was the attitude adopted by the hardy enthusiasts of the past towards this newcomer; and in pleading his cause I put myself in the shoes of the old timers, and spoke with their lips.

At many a motor cycle meeting of the last two or three years I have seen one of these non-sporting riders lingering timidly on the outskirts of a fringe of competition riders, treated as a fogey and a fool, ignored, chaffed, and despised.

If he asks a question, from some he gets a cold stare and from others a shower of ridicule. If he joins them in a club run, the majority race away from him and ask him where he has been dawdling, when he finally arrives half an hour late for tea.

If he encounters trouble, they nearly all roar past him in a cloud of dust; and generally give him every reason to think that some expert motor cyclists are bounders of the deepest dye.

There are exceptions, of course. Some of the experienced riders father the timid or elderly novice, teach him, ride with him, show him how to mend a puncture, grind a valve, trace a trouble, and so forth.

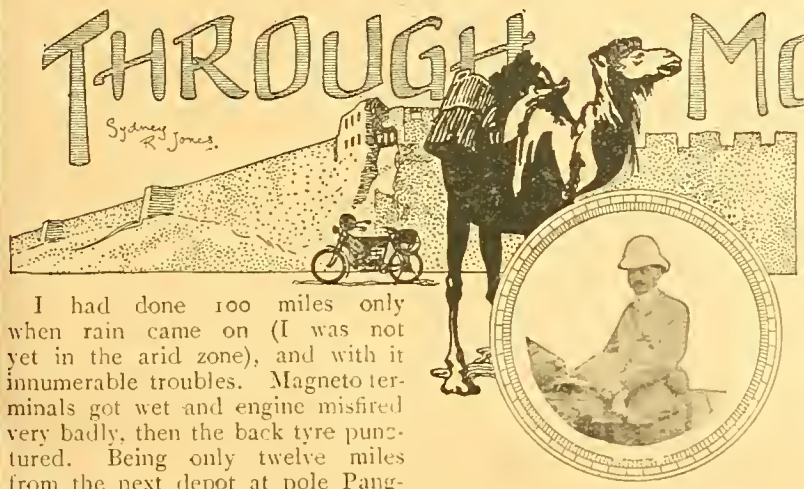
However, my club experience teaches me that to often the type of rider who will ere long represent the majority is cold shouldered and made to feel rather out of it.

If I seemed for the moment to range myself with his persecutors, especially in quoting the opprobrious title of "potterer," I was actually pleading for him as the person with the strongest claims to the best that the *camaraderie* of the road can give, and with a right to our deference, as being the person who will soon control both industry and pastime.

THROUGH MONGOLIA

PEKIN TO LAKE BAIKAL BY MOTOR CYCLE

BY PROFESSOR ERIK J. NYSTROM



The writer.

(The first instalment appeared last week.)

I had done 100 miles only when rain came on (I was not yet in the arid zone), and with it innumerable troubles. Magneto terminals got wet and engine misfired very badly, then the back tyre punctured. Being only twelve miles from the next depot at pole Pang-Tse No. 3,033, name Kau-Bar, I tried to bluff it out and ride home on the deflated tyre. This played havoc with the back wheel; air tube got cut and wound itself to shreds on the back hub; the rim got so dented that it held together only through a miracle. Yes, it was a foolhardy attempt to ride like this at the beginning of the journey. After all, I could not make Kau-Bar, but spent the night in a Mongol tent six miles away.

Next day, June 11th, was so bad that I nearly gave up the whole attempt. I put a new air tube in the old cover, but scarcely had I ridden ten miles before the tube burst. I had now only *one* such tube left: if I put in this one, there would be absolutely none in reserve to use for the whole remaining part right up to Baikal. Things looked decidedly dark. Besides I had never taken out the back wheel, and now this had to be done so as to put on the reserve tyre I had brought with me. To do this out on the lonely road when one doesn't know how, but is forced to refer to books and papers, and, to crown all, with a hurricane blowing with squalls of rain, was not a cheering job. The wind tried to blow away all the lighter part of my outfit, including the instructions for the back tyre changing. A kindly and intelligent Mongol came along, and we worked with grim determination on the back wheel. The back mudguard had broken off its fastening, and I threw it away now; nor did I fasten the hand brake again—I was too weary to do it. There was no time to take a meal, and I was fast getting thin on these exertions. My yellow khaki suit with leather leggings is blotched and streaky with oil and mud, and I can already fold it double in front; it is getting too wide, and I am shrinking! That miserable day I did only ten miles in all.

Better going with New Cover.

June 12th. Diary says: "Better now with new cover." This new tyre cover was a substantial looking construction, with leather band "*à la semelle*" and steel-studded. But I had no spares left, and I was obliged to start the desert journey absolutely reliant upon the perishable articles fitted.

At noon I arrived at the telegraph station. Pang-Kiang or Ho-Ma-Hu, 160 miles from Kalgan, and was most kindly received by the Chinese telegraph clerk, Mr. Johnson, who kindly entered in my diary date and hour of my arrival. His wife, who is a very pretty little woman, gave me some fine silver wire, which proved useful in cleaning the carburetter jet. Mr. J. gave me a substantial lunch *à la Chinoise*.

The country was getting horribly brown and sterile now. No more grass or wild flowers, only a few blades of hard grey-green weeds. The desert is near, and I see the usual phenomenon of Fata Morgana, and feel the dryness of the atmosphere. It is not thirst, it is a peculiar drying up of the body; the throat is parched, and the lips crack and bleed. From the desert the wind carries sand which deposits on the southern slopes. Can there be anything worse than sand for the motorist? You try to bluff it by driving full speed into it, but soon—perhaps in the middle—the wheels are held fast as in glue and you have a fall. Then it is impossible to start the engine; you cannot push the cycle fast enough. The only way out is to get a strap round your shoulders and drag inch by inch, the wheels sinking ankle deep in the treacherous element. I could at that time well imagine the labours of Polar explorers dragging their sledges.

Crossing the Lonely Desert.

Right in the loneliness of the desert there lies a great Lama temple named Hertu-Sume, a temple not built at all in Chinese style, but with its white plain walls slightly sloping inwards, and at the top a magnificent broad relief in sculptured, blood-red brick, with huge round brass plates polished and shining like the sun. This I photographed, the priests looking on suspiciously, and all avoiding the camera as if it were the fiend.

That night I could not arrive at any depot of mine, so I went far out of the way to reach some tents in the distance. The poor Mongols, however, were terrified at both man and machine, and although I proffered silver in big lumps, they threw it on the ground and refused shelter. I once thought of forcing entrance, but would not scare the poor ignorant people, so I made my way very disconsolately back to a well. I pitched my tent, crept underneath beside the oil-dripping engine, threw myself down just as I was, too tired as usual to prepare any food.

Dire Difficulties and Welcome Chinese.

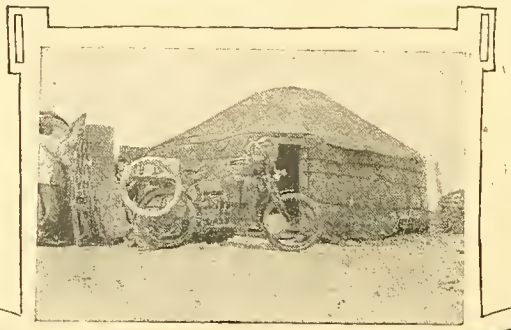
Monday, June 13th. Good start, but road afterwards disappointing; bumps and stones. Many scores of antelopes came quite near. Graceful animals like roe-deer.

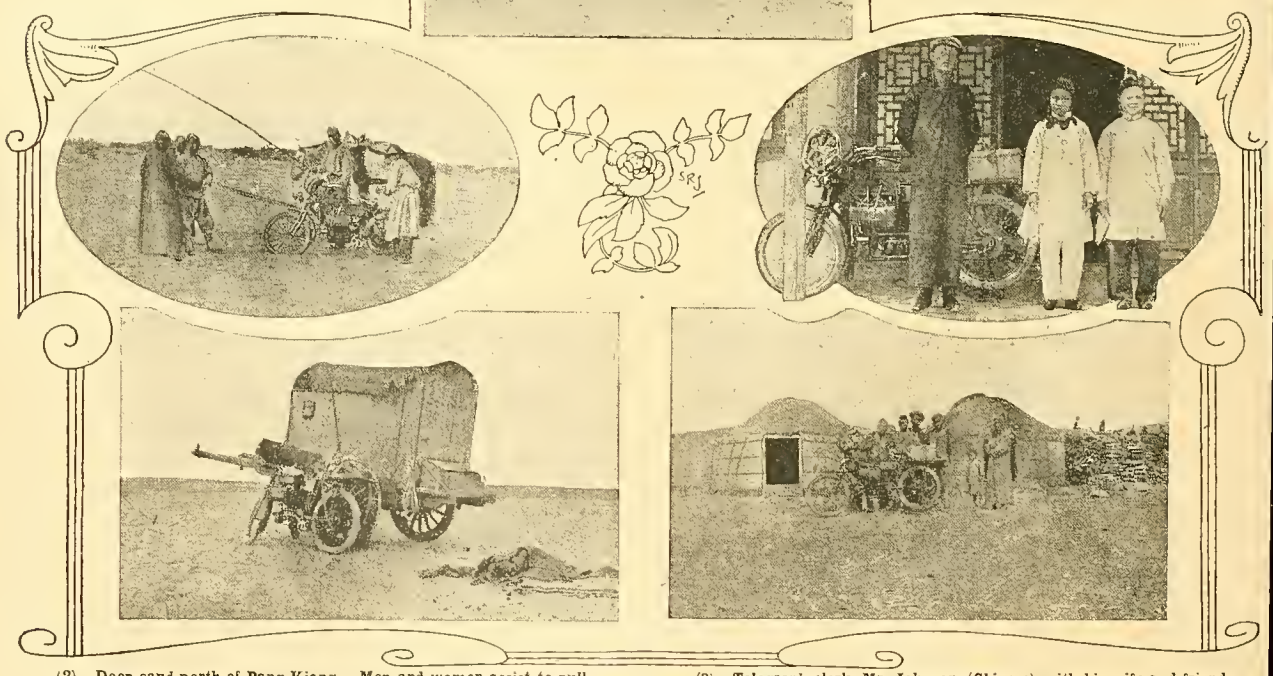
Through Mongolia.—

The road descends in a basin, a horrible devil's cauldron, parched by the sun and glistening with a white deposit of soda. How I longed to see the next depot, pole Wu-Tse No. 1,950, name Yen-Pille. But, as mentioned, the petrol consumption had always exceeded calculations, and now yesterday's passing through sandy patches, often at full throttle, had simply run away with the all-important *essence*. Result, petrol gave out right in the middle of above-mentioned place. The emergency petrol only lasted a few minutes, and there I was, left alone with a machine as dead as a door nail. Luckily, although I had not eaten much for several days, I had at least had the precaution to fill a gallon can with water. Now I was going to push the 3 cwts. of dead material; I did so, and I promised myself a drink of water at every telegraph pole passed. This worked well in the beginning, but soon the oil clogged and the machine got simply impossible to push. Weary and desperate, I led it behind a little hillock, where I left it, and began to set out on foot towards the next depot. But in the scorching heat I did not enjoy this walk at all, and started out on the side of the road towards a caravan camp I saw in the distance. Here I encountered a rather cool welcome, the Chinese looking suspiciously at a lonely khaki-clad individual without any baggage or provisions. When I got a Mongol with a horse and rope to drag the cycle into camp, they became more interested, and I spent the rest of the day in their camp. The rest did me so much good that in the evening I participated in athletic exercises which the young lads in the camp arranged. We did high jump, tug-of-war, and vaulting over the huge piles of merchandise which formed the camel loads. That night I slept in the merchant's tent.

June 14th. A Mongol came in at three o'clock in the pitch darkness, and made tea over a blazing fire of camel dung. Now that the Chinese were going to break camp they wanted to leave me in the lurch, but I stuck to them like a leech, and had some of the lads to help to push the motor some miles. Then when they saw I meant business, an older Mongol came forward and hitched a camel on to the machine with two long ropes. The ugly brute looked out of the corner of his eye, didn't like the job, and began kicking out furiously at the machine with his long legs. But by and by, after a tiresome morning, we arrived at Yen-Pille, and it was a rare joy to catch sight of the big red can of petrol, the bottle of stout, and the fine English tins of provisions, all looking so civilised here in the wilds. Here at Yen-Pille there are bogs and salty morasses, white with incrustations. In 1907 one of the Pekin-Paris cars got stuck here, so the people told me.

The author's F.N. outside Mongol tents. Note the luggage carried.





(2) Deep sand north of Pang Kiang. Men and women assist to pull.

(3) Telegraph clerk, Mr. Johnson (Chinese) with his wife and friend in Pang Kiang.

(4) Rival desert travellers—motor cycle and camel cart.

(5) Mongolians gathered round the motor cycle at Sair-Ussu, north of Udde.

Udde the Middle of Mongolia.

For once I now had a fine spin; the road was tolerable, though the sterility of the land was complete. Here reigned only death and desolation. Thousands of corpses of horses, camels, and oxen lined the road in all stages of decomposition, some with the fur still

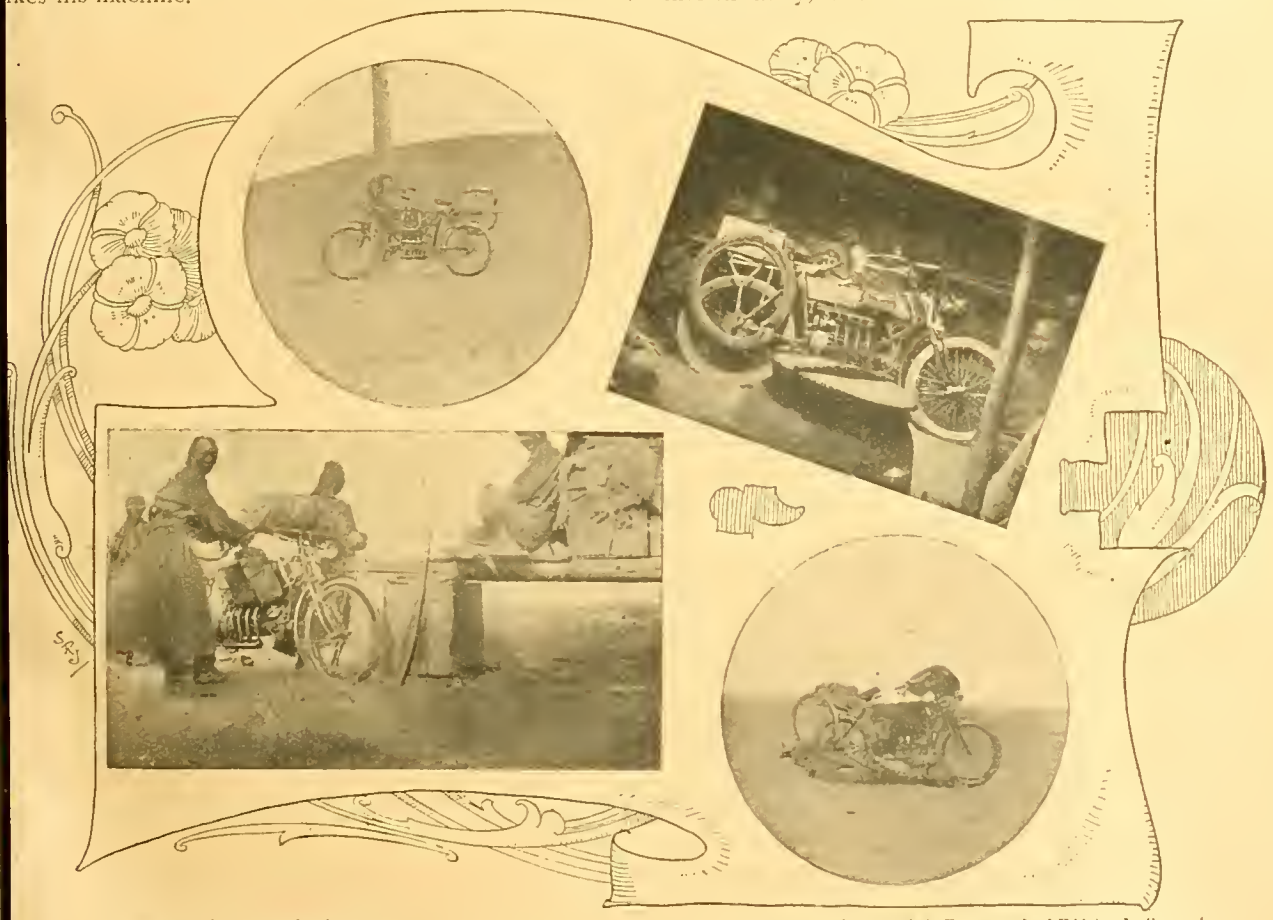
Through Mongolia.—

on, some with white ribs that glistened in the sun. I saw a man, a Chinaman in blue clothes, lying there also. I thought he was ill, so I wheeled up to him. But he had passed beyond human help, his body being already discoloured, and flies in swarms all round.

I was nearing the telegraph station Udde now, which is just in the middle of Mongolia. The lubricating oil was running short, but still that would not account for the horrible grinding noise I heard from the back gear. It was like a steel saw cutting iron rails, and it would truly cut to the heart every motorist who likes his machine.

cogs stripped." and was pondering lugubriously over the fact that here at Udde I was as far from anywhere as I could possibly be.

I sat down and racked my brain for several minutes to find some way out of it. Then set to work to take off the gear case, when I found my supposition was true, the cogs *were* stripped, but I saw that it was only their tops that had come off. If I could make the cog wheels come nearer to each other the thing would perhaps work. Very much perhaps, but still——. I now recognised that the accident was not the fault of the makers—it was that mudguard, which I had thrown away, and whose fasteners had served as



(1) The Gobi desert is far from level in places. The author's guide—the telegraph poles.

(2) Inside a Mongol tent at Sair-Ussu (north of Udde). In the centre, pot in which tea is boiled with a fire made of camel dung.

(3) A rest at Sair-Ussu. Observe the Tibetan forked gun.

(4) The F.N. leaning against a skeleton of an animal, of which thousands line the road.

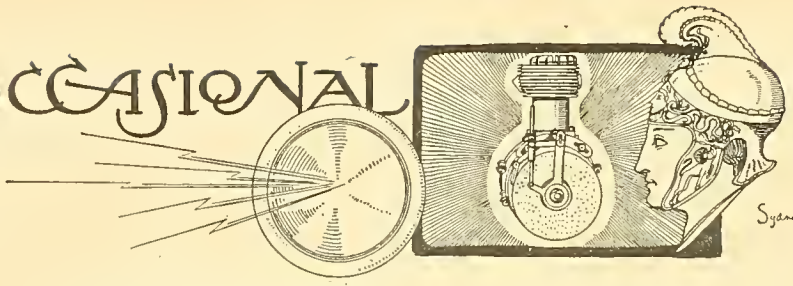
Udde is a terribly lonely place, some Chinese huts below a great black jagged rock, and no life all around. Poor telegraph clerks, who must live here for years! I spent a night with these unlucky people, who received me kindly.

Next morning, June 15th, after photographing my hosts, I set out again, the gear grinding hard as ever. I had got a new supply of oil, and injected it everywhere, but to no avail. At last, luckily near a caravan camp, the cycle came to a standstill, the engine turning round, but the back wheel was immovable. This was a terrible shock to me. I thought an accident had happened which I could not possibly repair, viz., the stripping of the cogs in the back gear. I was just going back to the station to telegraph, "Finished;

washers to keep the cog wheels together. A handy Mongol and myself now filed and bored washers for all our worth for several hours until twelve noon, when to my joy I saw the connection between power and wheel was established. I remunerated the good Mongol and was off, and to my intense satisfaction made a very nice spin of eighty-two miles that afternoon to the next depot, Sair-Ussu. "Fanny," who now was a reformed character, was taken into the tent and photographed. The country I had traversed consisted of a series of flat, broad valleys, where the line of telegraph poles can be seen to an enormous distance. Often one hundred poles in one valley (seven poles to a li, or twenty-one to an English mile).

(To be concluded next week.)

OCCASIONAL COMMENTS



By "IXION"

Carbonisation and its Cure.

Riders are slowly realising that a tendency to carbonise oil is the worst fault of the modern motor cycle engine. Eight years ago I ran a 3 h.p. air-cooled engine of the De Dion type for about 5,000 miles without once removing the cylinder. Nor do I remember that the engine efficiency became vastly diminished in this large mileage; I tuned up my valves and ignition, and, if memory serves me aright, the jigger climbed almost as well when I sold it as when it was new. To-day I remove my cylinder every 1,000 to 1,500 miles.

A modern machine would be far more reliable, and should run 15,000 miles without any stoppages except for such minor items as sparking plugs, belts, tyres, and exhaust valves. But at least once in each 2,000 miles the cylinder would have to come off, for the removal of carbonised deposits. It is true the modern cylinder can be removed and replaced, including the necessary scraping, within an hour, whereas it was half a day's work at least to perform the same process with the 1903 machine referred to; but these attentions annoy busy men who have not the time to devote to them, and makers should aim at the elimination of carbon deposits.

It seems to me there are two main needs. The first is the general adoption of a better lubrication system; present systems swing a pendulum between repletion and starvation, and the recurring periods of repletion, when the crank case is swimming with surplus lubricant, are largely responsible for the deposits.

Much more can be done in this direction than is generally understood. Air-cooling is not the *sole* culprit. Two cars, each possessing water-cooled engines, are housed near my residence; one gets carbonised every 2,000 miles, the other every 15,000 miles; the difference is in the lubrication systems.

Dust the Greatest Offender.

The other palliative lies in the screening of the carburetter from dust. The 1903 machine referred to had a surface carburetter, with a "twin tap," as we used to call it, on the top of the tank, just abaft the steering head. Through this orifice and another also on top of the tank all air was inhaled, and owing to the positions the air was practically dustless; what little dust was inhaled was deposited in the tank and failed to reach the cylinder.

To-day, when carbon deposits are analysed, a high percentage of the filth is found to be road dust which has been drawn into the engine *viâ* the carburetter. Hence we stand in urgent need of screened carburetter air intakes, and few are the makers who are working in this very obvious direction. Carbon deposits are cynically accepted as an inevitable evil, and boasts are made of the celerity with which cylinder can be dismounted, whereas this job ou not to be more than a hardy annual. We might well scrap all the bars and bolts and locks in houses and double the police force.

The Pseudo-Amateur.

Some motor cycling politicians are far n sanguine than myself as to the possibilities of pu ing the amateur department of the sport. For m years past I have been engaged in organis managing, and administering various sports from amateur standpoint, and each year only deepens conviction that it is impossible to enforce a st definition of amateurism.

Other branches of so-called amateur sport simply honeycombed with secret professionali although the administrators often enjoy far m experience than the governors of motor cycling; all the remedies prove failures when tested by p tical experience. As a journalist I often rec information in confidence, which is practically un the seal of confession, to use an ecclesiast metaphor, and when I take my seat on a commi my lips are sealed, and the tale of facts whic might unfold masquerades as a mere opinion suspicion.

Within the last month instances have come to knowledge of so-called "amateurs" being machines for a particular trial, and if succes being presented with their mounts gratis, or s them at a purely nominal price. The trade are q as much to blame as the shady pseudo-amateur.

If reform is insisted upon by the main body of t amateurs, it must take one of two directions: ei all distinctions must be jettisoned, or the amat definition must be broadened, to include all ri who do not actually subsist by motor cycling.

Light Four-wheeled Runabouts.

It is interesting to note the prices of the vari quadcars that are appearing on the market. Cert French and American specifications are obtainable prices in the neighbourhood of £60-£70; machines built with an eye to British fads and fan are listed at a much higher figure, ranging from £ to £100. As soon as £60 is exceeded, these machi have to compete with such vehicles as a second-h 6 h.p. Rover, and the market open to them is th fore limited. A really extensive demand for s designs is technically and financially impossible the moment. By the way, I have been amused at claims of recent designers of spider quads as to t originality. Why they were with us ten or eleven ye ago! the £60 motor car-cycle is certainly an att tive proposition, but it is still a very long way off.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

16,000 Miles with a 3½ h.p. Sidecar.

[5325.]—In reply to Mr. R. Holford Jones on the subject of engine lubrication, throughout the whole distance, winter and summer, I used nothing but Vacuum A oil, the amount varying from half a pumpful every seven miles to every ten miles according to the temperature, in addition, of course, giving a little extra either before or after a long steep hill.

E. S. NEW.

Colonial Requirements.

[5326.]—Being a constant reader and subscriber to your valuable paper, may I claim a little space in your columns to air the general grievances of a "home" but now a "colonial" motor cyclist. (1.) A system of frame springing as well as front fork is absolutely essential. (2.) Beaded-edge rims must be made heavier and stronger; for instance, I have had three rims on back of my last season's Triumph. (3.) Engine clearance must be at least 6in., and last (4) but not least, we really deserve a reasonable time for delivery.

My experience has been whilst out here (two and a half years) that a heavyweight with two-speed gear (not necessarily free engine alone) is much more comfortable and reliable than a lightweight, which is tossed about so by the rough roads, the nature of which makers know nothing, or seem to know nothing. In this district we have a good number of machines, mostly Humbers and Triumphs, which are the most popular both as solo and passenger machines.

F. T. ROCHESTER.

[5327.]—A few weeks ago I noticed that "Ixion" asked for opinions of colonial riders on the type of machine required for colonial work, so send you mine, having done some fairly rough riding. What about a specification something like this: Very strong spring frame (Bat); Roc two-speed gear (absolutely essential); large petrol tanks, 1¾ or 2 gallons, with gauges, large fillers, and petrol filter or strainer; reliable automatic lubrication; footboards fairly well forward (Rex pattern); 2½in. or even 2¾in. tyres, with security bolts; extra strong rims with stout spokes; good spring forks (Druids work very well here); plenty of engine clearance; strong and roomy carrier; easy access to top of piston; fairly long handle-bars; and the usual h.b. control, adjustable pulley, etc. Makers might produce, say, three models—a 3½ h.p., 5-6 h.p., and 7-8 h.p. Personally I prefer m.o.v.

Another point, and that is, as many nuts as possible to be the same size, to eliminate carrying a whole workshop about, and makers should not be slow to put lock-nuts where there is the least probability of single nuts shaking loose.

I have lately been riding a two-speed Humber, and have nothing but praise for it. I have often thought, however, how useful a couple or so more h.p. would be!

One of my last rides was from Kimberley to Bloemfontein and back, over 200 miles of "chronic" roads, nearly all low-gear work which eats up the petrol, and should one run short of this there is no "pushing to the next village" in South Africa! My Humber, however, ran splendidly, and I had not to touch a thing from start to finish on the motor, the only involuntary stops being a couple of punctures (barbed wire from the fences).

If makers will not make a decent colonial machine, they might at least put thick rims and spokes on the ordinary mount when ordered for the colonies.

J. SCOTT.

Kimberley, South Africa.

Sportsman or Potterer?

[5328.]—When I read letter 5307 from your correspondent Mr. Chas. S. Patterson, I felt inclined to say "Bosh!" It is surely incomprehensible that a rider boasting a mileage of 16,000 should say that a single-speed lightweight will have an advantage over heavy roads. In stating this, I may say that I am not an enemy of lightweight machines in general or the Douglas in particular; on the other hand, I think lightweights are splendid, and the Douglas is one of the best of its class. But what I want Mr. Patterson and others to understand is that lightweights cease to become splendid as soon as they enter into competition with heavyweights.

Of course, it is rather difficult to know what Mr. Patterson really means when he talks of defying the single-speed heavyweight rider to keep in the saddle, in his test; he may be advertising a new brand of gum, or may have prior knowledge of an earthquake that is to take place in his neighbourhood. Be that as it may, a recent Sunday provided me with an incident not without its educational aspect. About half a dozen of us were out on a portion of the Quarterly Trials route, the party including a 2¾ h.p. Douglas, a few months old. During our trip we had to go up a pretty stiff bit, with a very bad surface, and—the Douglas failed! This in spite of a very useful bit of work with the pedals. Now, I do not say this was a bad performance for either rider or machine; on the contrary, it was distinctly creditable to both that they got up as far as they did, but I mention it to prove my assertion that the lightweight, excellent though it is, is no serious competitor to the standard 3½ h.p. machine.

I am afraid my leisure will not allow me to accept Mr. Patterson's challenge; however, my district is Surrey, and if he cares to come over here with his machine, I can traverse a route that I defy him to follow.

E. M. OLIVER.

Motor Cycling in Madras Presidency.

[5239.]—I send a photograph which may be of interest. Most of the motor cyclists here take in *The Motor Cycle*, and most interesting it is too. The photograph is taken

Start of a speed-judging competition in Madras.

at the start of a motor trial we had here during the recent Christmas week of festivities. Though quite a dozen motor cyclists were here at the time, only four appeared for the event, due no doubt to the fact that from Christmas Eve to New Year's Day Waltair is the scene of unceasing festivities. The trial was a speed judging test, the winner being the competitor who travelled over a given course at a speed nearest to twenty miles an hour. The competitors were mounted on a Triumph, a four-cylinder F.N., a single-cylinder free engine F.N., and a Vindec Special (mine). The roads in this district are good as Indian roads go, and there are a large number of motor cycles in use.

The one drawback is the strong attraction the engine explosions seem to have for cattle; one sees them charging down towards one often unpleasantly near.

Waltair, Madras. G. L. PETERS.

Cost of Running a Motor Cycle.

[5330.]—Below I give the cost of running a 2¼ h.p. shaft-driven F.N. during the last eight months. I use the machine chiefly for business, and have to be out on it practically every day, regardless of weather.

Cost of machine, £40. Miles ridden, 5,438.

	£	s.	d.	Cost per mile.
Petrol, 44 gallons (123.6 miles per gallon)	2	12	7	.1160
Lubricating oil	1	6	9	.0590
Repairs and renewals	2	9	3	.1087
Tyres (two) and inner tube (one)	4	12	11	.2051
Carbide and batteries		5	6	.0121
Total	£11	7	0	.5009
Clothing, etc.		19	9	.0435
Licences and registration ...	1	10	0	.0662
Accessories	1	0	0	.0441
Depreciation and interest on capital on bicycle and accessories at 20% per annum ...	5	9	4	.2412
Total	£20	6	1	.8959

The account has been very carefully kept. The tyres are almost new, and have not yet been punctured. The engine has been somewhat out of tune lately, as I have not had a chance to get it put right.

For the first 3,000 miles the petrol consumption worked out at 139¼ miles per gallon. The shaft drive and two-speed gear have been most satisfactory. I have not had to touch either of them since I got the machine. Compared with belt drive, the shaft not only saves very considerable expense, but especially on the awfully muddy roads I have to ride on at present relieves me of much worry and trouble, such as I used to experience with my last belt-driven machine.

F. T. MARLEY.

Suggestions for Improving the Design of Motor Cycles.

[5331.]—Now that manufacturers are doing their best to bring their machines in line with the requirements of motor cyclists, seen by the various improvements on the motor cycles exhibited at the late Show, would it be expecting too much to ask them to try and incorporate all the various improvements in their next year's models, whilst retaining their own characteristic features?

The following improvements one would like to see in next year's models as standard fitments:

(1.) The Xl-all moulded seat saddle—in my opinion the best by far on the market.

(2.) A front wheel stand. The Triumph, Rover, Enfield, etc., are fitted with stands. Why not all?

(3.) Butt-ended air tubes for both wheels.

(4.) Tool-bags to have lock and key—a most necessary precaution.

(5.) A second petrol tap in the tank to draw off petrol.

(6.) Magneto switch. Many may consider this unnecessary.

(7.) Footboards.

(8.) A *silent* silencer with cut-out.

(9.) Casing for magneto like the one fitted by the B.S. Co. Mud shields only half meet the case.

(10.) Valve tappets and springs as on Triumph.

(11.) Cover for valve springs. A very useful fitment f wet and muddy weather.

(12.) Large petrol and oil filler caps. Great improveme shown at the Show in this respect.

(13.) Dustproof petrol injector tap.

(14.) A *complete* set of tools to include a box spanner remove valve caps. At present one generally has to purcha an extra large size spanner that will not go into one's to bag.

Surely, it would not be difficult to embody the above i provements in one machine.

At present I suppose one cannot expect too much in t way of spring frames (*vide* B.A.T.) and variable gea (*vide* Zenith), but one cannot help thinking that more mig be done in this direction.

The Austin valve remover deserves to be widely known, it is what it is stated to be. It is cheap, and I have fou it most efficient.

My card enclosed will show you that my only interest the above is that of one who rides a motor cycle for pleasu only.

AA 2623.

Improving Old Pattern Machines.

[5332.]—I send you two rough photographs of machine "Azwoz" and "Aziz." I do not think much planation is necessary. The wheels are now 26in. inste of 28in., and the tank is 4½in. smaller than before, a these two together, of course, make the machine consid ably lower than it previously was. It runs splendidly, a can climb infinitely better than it did. Altogether it is very decent little machine. The engine is a 2¾ h.p. Minerv

Below I give a list of old and new parts used. The fra was cut down considerably, and the front tube straightened. You will notice the distance between pedalling sprocket and the engine is greater in the machine than in the new. This portion of the frame shaped like a tuning fork, so it was an easy matter reduce it 2in. at this point.

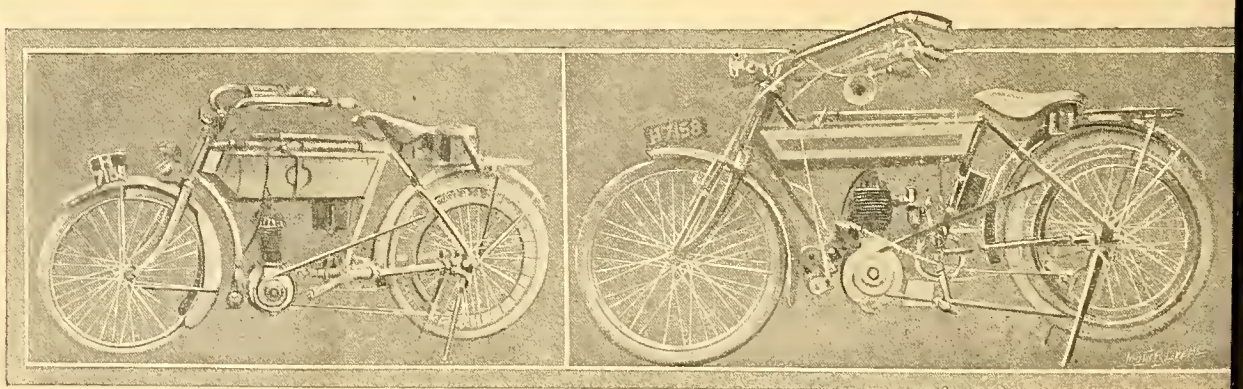
Old parts used were frame, engine, pedals, front h and carrier.

New parts—carburetter, forks, handle-bars, brakes, sadd back wheel complete, belt, tank, magneto, mudguards, fo rests, and front wheel (less hub). Tyres are not absolut new. I bought these complete at a very low figure.

Of course, I need not have had a new saddle or hand bars, also the tank could have been cut down, but as previously had a compartment I did not much care abo it. Then again, I was not compelled to have new for but for the sake of appearance it was best. (They Chater-Lea).

I recently made an absolute non-stop—124 miles—wh the roads were at their worst. I think it is most interest to see what can be done in the way of improving old-patt machines.

VEEK.



A rejuvenated motor cycle. The main parts and fittings used in the machine shown on the left were utilised for the modernised mount.

Is the Modern Motor Cycle Perfect?

[5333.]—I should like to ask Mr. B. H. Davies with reference to his article alleging the much greater efficiency of the modern engine as compared with its like of a few years ago, how it was that Wondrick, riding a 5 h.p. Laurin and Klement, in the 1905 International Cup Race on the Continent, averaged over fifty-four miles per hour. Also, why did Chitty, in the Time Trials at Brooklands last year, use a 1906 Givandan to make his world's record, and Collier a 1908 J.A.P.? C. WATSON.

Exeter M.C.C. Trial and Sunday Competitions.

[5334.]—I have been glad to see the recently-formed club doing so well, but I think that it is a matter of regret that it should support the holding of Sunday trials. If I recollect correctly, such trials were mooted near London, but very rightly quashed.

I am not one who decries Sunday motor cycling—I use my own mount frequently on that day—but I consider that anything in the nature of an organised trial has the effect of bringing down the disfavour of the general public on the sport and pastime of motor cycling.

C. R. EGERTON POPE, Inst.A.E.

Variable Gears and Slipping Clutches.

[5335.]—I was very interested in reading the article on "Variable Gears and Slipping Clutches" by Mr. J. L. Milligan, B.Sc., in the last issue of your paper, and always welcome these instructive technical contributions. But is there not some slight error in the torque curves given by the author?

Surely in a high-class 500 c.c. engine the torque or twisting moment does not actually fall off so rapidly with a slight decrease in speed. Theoretically the torque of an engine (within limits) is the same whether the engine is developing 10 h.p. at 1,000 revs. per minute or 1 h.p. at 100 revs. per minute.

Of course, I know that theory is not practice, and that owing to heat losses, wire drawing, etc., etc., an internal combustion engine cannot hold its maximum torque at all speeds, but is the reduction in torque as great as Mr. Milligan would have us believe? According to his curves for a motor cycle geared 8 to 1 running at a speed of ten miles per hour the torque is given as 110 lbs., and at five miles per hour only 60 lbs., thus a forty-five per cent. drop in lbs. torque by halving engine speed, an unfortunate engine indeed!

The ability of a motor cycle to climb any hill depends (independent of speed) upon the available torque of its engine. The speed at which the hill can be climbed depends upon the h.p. developed; thus slipping the clutch simply means that we are using more fuel to get more h.p., and at the same time wasting that extra h.p. in heating up and wearing away our clutch. J. T. CLARKE.

Steam-propelled Motor Cycles.

[5336.]—There has been a great deal of controversy regarding steam driven motor cycles, and up to the present they have been condemned because of the required boiler.

I have had thirty years' experience in the management of gas and steam engines, and a fair tussle with the present petrol motor, and I must admit I like the old steam system, as I find it the most reliable. This being so, I set myself the task of overcoming this difficulty with the boiler, and after several months' hard thinking, I venture to say I have solved that problem.

Some of your readers may say I am, or have gone, mad (?). However, if my system prove correct, I can promise your readers a far, far cleaner balance-sheet than what I have read in *The Motor Cycle* recently regarding the cost of running a motor cycle.

First of all we drop petrol, and then again batteries or magneto for ignition, carburetter, wires, levers, sparking plugs, and silencer. These are the cause (?) of all troubles, and we find ourselves with a steam engine about a quarter the weight and size of the ordinary petrol engine of to-day with equal driving power, combined with simplicity and reliability. This engine would run from forty down to two miles per hour, and with perfect silence, and almost a clean frame, and at the cost of about 1s. per 100 miles.

As I have said, the above has cost me a lot of thoughtful labour, and I am at present modelling an engine on the lines mentioned. If there is anyone who would like to venture on the idea I shall be pleased to communicate with him, as I feel sure that steam will yet take the place of petrol.

AN OLD ENGINEER.

A Suggested Title.

[5337.]—For a joint co-operative association a taking title makes a talking point that gets a good gate. Touring is the most popular side of motoring, and, prior to amalgamation, the Automobile Association and Motor Union had each a touring department. "Touring" might, therefore, be appropriately and beneficially included in the combined body's new title. Worked out correctly this would be, I think, the Automobile Touring Union or *tout court*, the Auto-Touring Union. A still more taking title, perhaps, would be the Auto-Touring Club. AMATEUR.

Dutch Touring Record.

[5338.]—I believe it will interest you to hear that the Dutch M.C.C. has organised a Dutch touring record under the following conditions:

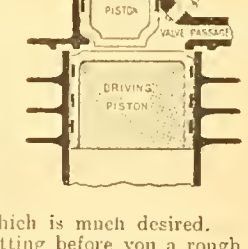
The matches for this record are open for members of the Dutch M.C.C., and will be ridden by teams of two riders. The winning team will be the one which has covered the longest distance within twenty-four hours. The minimum distance is 200 kilometres (about 124½ miles), and the riders will be checked every 100 kilometres (about 62 miles). The competition will remain open till January, 1912, and nice silver Plaques d'Honneur will be made especially for this purpose.

I believe the idea of a touring record for teams of two riders is unique, and we are sure that it will prove to be a great success for the Dutch M.C.C. and for the popularity of the motor cycle in Holland.

Amsterdam. A. CITROEN, Hon. Sec. Dutch M.C.C.

Scavenging Devices.

[5339.]—A few weeks ago you were kind enough to publish particulars of a scavenging device designed by me. Another design with the same object in view has been sent you, and I notice you make the following remarks regarding the question: "Makers of engines are chiefly concerned in getting a full charge of gas into the cylinder, their contention being that it will get out without mechanical aids. . . ."



Now, at the risk of being troublesome, I should very much like to ask how gas can possibly get out of a combustion chamber unless it be pushed out? If it does get out, as you say, then it follows that there is a vacuum in the combustion chamber between the exhaust and the induction strokes—a condition of things which no maker or anyone else is likely to claim actually occurs.

Then also, complete scavenging is surely likely to assist very considerably in "getting the full charge of gas into the cylinder," which is much desired.

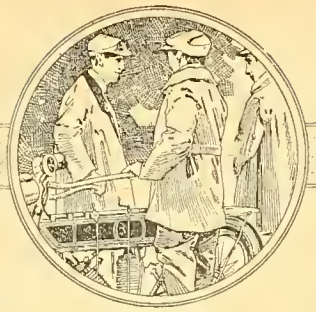
May I take this opportunity of putting before you a rough sketch of a modified form of the device previously submitted to you [letter 5213, December 22nd]. In this the scavenging piston is double-ended; the space above simply contains air at atmospheric pressure. This air on compression and combustion strokes is compressed into a very small space, and acts as a powerful spring, causing the piston to descend and clear the combustion chamber on the exhaust valve rising.

I regret I am not in a position to experiment before writing to you. Should any reader more fortunately situated desire to take the matter up I should be glad to communicate with him. R. H. CHURLEY.

[In our editorial footnote we desired to convey the impression that makers did not look upon complete scavenging as so important as complete charging of the cylinder.—ED.]

[A number of letters are crowded out owing to being received late.—ED.]

CURRENT CHAT



Time to Light Lamps

Special Features

(Greenwich).

Feb. 2nd	.. ...	5.48 p.m.
.. 4th	.. ...	5.51 p.m.
.. 6th	... ...	5 55 p.m.
.. 8th	... ...	5.59 p.m.

QUARTERLY TRIALS: Croydon to Hastings and Back. Tabulated Results.

THE PROBLEM OF THE LIGHT RUNABOUT.

A NEW MAGNETO.

The Lamp Trials.

The A.C.U. lamp trials to be held at Brooklands next week have not attracted so many entries as was anticipated. Only three lamps had been entered up to the time of closing for press, although the final date for acceptance is Saturday next, the 4th inst. The entries consisted of two C.A.V. and one Seabrook Solar headlight. It is to be hoped that good support will be forthcoming, as the result is sure to be most instructive to one and all.

Ten Miles Speed Limits.

There have been three recent local inquiries into applications for ten miles speed limits, the first one relating to an extension of the limit already existing at Hampstead, another for a ten miles limit over practically every main street in the Borough of Chatham, and a third relating to a length of road in and adjoining the village of Glan-Conway, which is on the road running along the east side of the Conway Valley from Llanrwst to Colwyn Bay and Llandudno. The solicitor of the R.A.C. was present at all these inquiries, and was able to bring evidence in opposition so far as was necessary.

Results of Harrogate Gymkhana.

The results of the gymkhana organised by the Harrogate and District M.C.C., and held on Wednesday last week at the Dragon Road Skating Rink, were :

Foot and Wheel Race.—1, W. E. Grange (2½ h.p. Singer); 2, F. Mackay (5 h.p. Rex).

Ring and Bucket Race.—1, J. Mackay (3½ h.p. Rex); 2, A. B. Hughes (3½ T.T. Triumph).

Obstacle Race.—1, H. W. Fortune (2 h.p. Motosacoche); 2, A. B. Hughes (3½ h.p. T.T. Triumph).

Tilting at the Rings.—1, H. W. Fortune (2 h.p. Motosacoche); 2, W. B. Atkinson (3½ h.p. Triumph).

Musical Chairs.—1, F. Mackay (5 h.p. Rex); 2, W. Grange (2½ h.p. Singer).

Ring Picking.—1, A. B. Hughes (3½ T. T. Triumph); 2, J. Mackay (3½ h.p. Rex).

The Problem of the Light Four-wheeler.

The illustrations in this issue of two light four-wheeled runabouts or quads—the De Dion and the Robinet—will come as a surprise to thousands of our readers. Whilst some people have imagined that this type of vehicle is new, we have had dozens of designs submitted to us in years gone by, and probably the forerunner of the light spider type of quad was the one driven by Mr. Charles Jarrott in 1900. Let us hope that these facts will dispose of the claim that the light quad is in any sense a novelty.

Acceleration Test at Brooklands.

On Monday, C. S. Burney rode his Rudge motor bicycle on which he had competed in the Quarterly Trials to Brooklands. There the machine was officially timed by the Brooklands A.R.C., and it was found that in an acceleration test the R.W. attained a speed of thirty-eight miles an hour in a distance of 180 yards. The time from start to finish was fifteen seconds. The combined weight of rider and machine was 378 lbs.

Important Auto Cycle Union News.

The A.C.U. Competitions Sub-committee has made the following recommendations which will be put before the General Committee to-day :

Six Days' Trials.—That the six days' trials be held from a centre in Yorkshire, preferably Harrogate, but if that town be unsuitable, from York. The trial to start and finish at the centre selected.

Permits.—Permits have been granted to the Herts County A.C. (motor cycle section) for the Harrogate Inter-club Team Trial, in conjunction with which will be held a competition for lady competitors, for which *The Motor Cycle* has presented a silver cup, on Friday, April 14th. Open hill-climbs on April 15th and May 6th respectively, and a series of open speed trials on May 27th.

Inter-club Championship.—It is recommended that this competition be run off in one day (without eliminating trials) on July 8th.

International Race Meeting, June 10th.—The following programme has been suggested : One lap open scratch race for machines with engines up to 345 c.c. for *Automotor* Challenge Cup. One lap passenger motor cycle handicap for machines with engines up to 1,000 c.c., to be run in two heats. Four lap open scratch race for machines with engines up to 1,000 c.c. for *Motor Car Journal* Challenge Cup. One hour scratch race for machines with single-cylinder engines up to 500 c.c. or twins up to 585 c.c. It is suggested that a gold medal be given to the first private owner not in the first three.

International 50 kilometre race for machines with engines up to 1,000 c.c.

QUARTERLY TRIAL.—G. N. Higgs (A.C. sociable) climbing Titsey, the last of the hill-climbing tests.

FUTURE EVENTS.

Feb.	9—Auto Cycle Union Lamp Trial at Brooklands.
,,	8-11—Motor Cycle Show at Leicester
,,	16—M.C.C. Smoking Concert.
Mar.	18—M.C.C. Opening Run.
,,	25—Meeting at Brooklands,
Apr.	8.—Oxford M.C.C. Open Hill Climb.
,,	14-17.—M.C.C. London - Land's End Trial and Easter Tour.
,,	14-17—Herts. County A. C. Harrogate Tour and Open Hill Climb near Harrogate.
,,	22.—A.C.U. Quarterly Trial (Yorkshire centre).
May	13—M.C.C. Hill Climb.
,,	27—Bristol B. & M.C. Open Hill Climb.

C.T.C. President.

His Grace the Duke of Portland has been elected president of the Cyclists Touring Club for the current year.

The Rover Redivivus.

Lest it should be imagined from our remarks in last week's issue concerning the new Rover, that the Rover Co., Ltd., has had but a short experience of motor cycles in general, we may remind readers that the company have been in the motor cycle business before, and that there are a thousand or two Rover motor cycles on the roads in various parts of the country.

The Hutchinson Tyre Competition.

The Hutchinson Tyre Co. have asked us to point out that a slight error has occurred in stating that the fifth and sixth agents' prizes were divided between Messrs. Hugh Rae, West Hartlepool, and A. Spaul, Norwich. The second, third, and fourth prizes were divided between Messrs. R. Holt, W. E. Chew, W. Kilby, Hugh Rae, and A. Spaul.

The T.T. Motor Cycle Course.

It is rumoured that no car race will take place in the Isle of Man this year, therefore nothing will prevent the motor cycle races being held on the 4in. course with the exception of the question of the cost to the A.C.U., which, we understand, will be at least £800 for one day and £1,000 for two days.

The increased cost is necessitated on account of the greater length of the course and the large number of special constables who will be required to guard it.

The Isle of Man Highway Board met last week, but have deferred their decision pending an interview with the Governor.

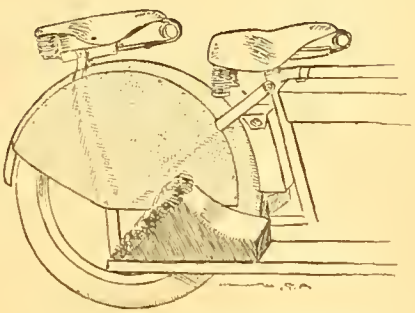
Apart from any other reasons, we hope the wishes of the Isle of Man authorities will receive every consideration, as they, after all, made both motor car and motor cycle road racing possible by inviting the organisers to the island to run races when it was, and is, impossible to hold them anywhere else.

An Original Form of Barter.

Most dealers in motor cars and motor cycles receive offers of the most extraordinary objects in exchange for these articles, but the instance reported by Messrs. H. Taylor and Co., of Store Street, Tottenham Court Road, last week, will probably take the proverbial biscuit. In exchange for a motor cycle with a sidecar a villa in Surrey was offered, and, of course, had to be refused as it is hardly necessary to say that Messrs. Taylor's premises are not exactly adapted for the accommodation of country villas.

Opinion of Rear Seat Attachment.

Mr. Hughes and his lady passenger, Miss Tomlin, were quite a feature of the Quarterly Trial with their two-seated P. and M. motor cycle. Rear saddle attachments are by no means new, though extremely uncommon. The lady occupied the rear saddle, and hung on to Mr. Hughes in front, whilst her feet were most snugly ensconced in special fur-lined muffs attached to the footboards. The extra large mudguard and the attachment of the saddle should be noted. Miss Tomlin, who expressed the opinion that this method of riding was more sporting and comfortable than lounging in a sidecar, wore a decidedly prepossessing divided skirt, which enabled her to adopt the astride position with great elegance and grace—not to say charm.



Details of the rear passenger attachment and mudguarding on G. Hughes's P. & M. (See accompanying paragraph.)

Finding Faults in Motor Cycles.

The result of the Liverpool "breakdown" competition was given last week, but it may be opportune to add a postscript for the sake of L.M.C. members in other of these practical contests, and for other clubs. There was some hesitancy amongst a number of those present to tackle the competition job. Experienced riders of motor cycles will have no fear of course; but novices perchance feel that their ignorance of motor cycle mechanics, rather than their knowledge, will be revealed. That spirit should be overcome. These clubroom tests are not to give any man a chance of eclipsing another, but to encourage and instruct one and all. Other clubs might take note.

QUARTERLY TRIAL.—G. Hughes and his passenger, Miss Tomlin, mounted on a P. & M., with rear seat attachment. This outfit was much admired.

Eighth Annual Dinner of the A.C.U.

THE eighth annual dinner of the Auto Cycle Union was held at the Waldorf Hotel, Aldwych, W.C., on Thursday last, the 26th ult. There was a very fair attendance, and for the first time in the Union's history ladies were invited. Few of the fair sex, however, graced the company with their presence.

After the loyal toasts, proposed by the Chairman, the toast of the Auto Cycle Union was proposed by Mr. J. K. Starley. On rising, Mr. Starley said that he understood that the speeches were to be few and short. He congratulated the A.C.U. on the splendid entries received for the Quarterly Trials, and referred to the support the Union had received in the various 1910 Trials, comparing the entry of sixty-six this year with seventy-two last year, and pointing out that this particular number (sixty-six) exceeded the average of sixty-two entries for the four Quarterly Trials in 1910.

Mr. Starley also referred briefly to the success of the Tourist Trophy Race, Six Days Trials, Sutton Bank Hill-climb, and the race meeting held for the first time at Brooklands, in which an aeroplane and motor cycle competed against each other for the first time. He was glad to note that the motor cycle won. He mentioned also how the Union was willing to test the legality of taxing sidecar attachments if any motor cyclist were proceeded against for refusing to take out a separate licence for a sidecar.

The toast was responded to by the chairman, Mr. Robert Todd, who, when replying, said he was glad to see ladies present, and hoped to see many more on future occasions.

The Trade and the Trials.

Touching the Quarterly Trials and the manufacturers, he said that certain makers were content to rest on their laurels and were anxious to stay out of the Quarterly Trials, and it was human nature for them to try and knock away the ladder from those younger manufacturers who desired to enter. The Auto Cycle Union, on the other hand, was anxious to encourage new makers, and competitions were undoubtedly excellent. He wished to see the Auto Cycle Union go ahead with them. (Applause.) He referred to the good work done by the committee, the result of which was not evident if the work went well, but if it did not people heard about it. He spoke of the excellent work done by Messrs. H. G. Cove, J. W. G. Brooker, Archibald Sharp,

WELL-KNOWN PERSONAGES AT THE A.C.U. DINNER LAST WEEK.

(1) T. H. Tessier. (2) W. H. Wells. (3) H. H. Collier, sen. (4) A. George Reynolds pleads guilty. (5) Miss Ruby Wilson sings. (6) J. K. Starley proposes "The Auto Cycle Union." (7) The smiling chairman, Robert Todd. (8) W. Worby Beaumont responds to the toast of "The R.A.C. and Affiliated Clubs." (9) Arthur Melrose whistles. (10) H. Massac Buist proposes "The R.A.C. and Affiliated Clubs." (11) F. Straight. (12) Fred Russell and Coster Joe entertain. (13) Miss Dora Thorpe plays the 'cello and sings.

Eighth Annual Dinner of the A.C.U.—

D. K. Hall, and other members, not forgetting Mr. A. G. Reynolds. He mentioned how the Auto Cycle Union was endeavouring to persuade the authorities that a three-wheeler was a tricycle. Someone, however, suggested that the powers that be should be persuaded that four wheels made a tricycle, but that, he feared, was beyond the Auto Cycle Union. (Laughter.) Mr. Todd then referred to a very appreciative letter he had received from a member who had benefited under the Free Legal Defence Scheme, who said that every motor cyclist should become, through the Union, an associate of the Royal Automobile Club.

Presentation to Mr. A. G. Reynolds.

The prizes were then presented by the Chairman, and during this part of the proceedings special mention must be made of the kettle and two *entrée* dishes which were presented to Mr. A. G. Reynolds by the Union as a token of the estimable work he had done in connection with the motor cycle movement during his long years of office as judge and official.

Mr. Reynolds, on being called upon to make a speech, spoke at some length on the incidents which had led him first of all to compete in an Auto Cycle Union Six Days' Trial and then act as judge.

Mr. H. Massac Buist then proposed the "Royal Automobile and Affiliated Clubs," making the speech of the evening. He referred to the Royal Automobile Club as the "Parliament Club of Motorists," which specially endeavoured to study its associates as well as its members. It was now in the position of being the Club with the largest revenue and membership and the smallest floor space. The new premises in Pall Mall would be a monument to this establishment of motorism. The speaker then referred to the suite of rooms set aside for the associates, to which motor cyclists would be particularly welcome. The Royal Automobile Club had always supported the Union, and was always absolutely at one with it.

Mr. Worby Beaumont, in reply, mentioned that he had been invited by Mr. Straight to attend, as Mr. J. W. Orde was absent in Berlin. He referred to the splendid manner in which Mr. Massac Buist had put forward the claims of the Royal Automobile Club and its associates as the parliament of automobilism. He mentioned how the Royal Automobile Club had always acted for the benefit of automobilism and the country in general. The Royal Automobile Club was the greatest possible benefit to the travelling motorist. He must also mention that the Auto Cycle Union was the best known body affiliated to the R.A.C. Mr. Worby Beaumont then referred at some length to his admiration of the courage displayed by motor cyclists in their various rides, both on the track and on the road.

The task of proposing the toast of "The Chairman" fell to Mr. Victor Hart, who said that it was his pleasing duty to propose the toast of the evening. He referred to the hard work put in by Mr. Robert Todd in the interests of the Union, and mentioned how it was to his able guidance that the Union had been steered at various times through troubled waters. Thanks to his energies, the Auto Cycle Union remained the only body which looked solely after the interests of motor cyclists and the two or three-wheelers. He hoped that for many years the chair would be held by Mr. Todd.

The Chairman, in reply, said that the work he had done had been truly a labour of love, and he thanked the last speaker for the very flattering terms in which his small efforts had been appreciated.

Interspersed with the speeches was a most excellent musical entertainment, and the thanks of those present are due to Mr. F. Straight, the secretary, for the admirable selection of artistes whose efforts rendered the evening a most enjoyable one.

M.C.U.I. (ULSTER CENTRE) SECOND QUARTERLY TRIAL.

This event took place last Saturday under the auspices of the above centre, and attracted an entry of fourteen riders, the starting point being Fortwilliam Park, about two miles from the centre of the city of Belfast. The route was by the familiar coast road to Cushendall and back, and presented no difficulties as regards riding to time, mile posts being placed over the whole course. Checking stations were arranged at Larne, Carnlough, and Cushendall (lunch). At the latter place each rider was obliged to stop for one hour.

Repairs or adjustments were allowed during the trial, except while the machines were in control at Cushendall. Ten marks were allowed for each checking station, and one mark deducted for each minute early or late after the first minute.

The first prize was presented by the president (Mr. R. G. Lindsay), who accompanied the riders and took great interest in the competition. Gold medals will also be awarded to all riders securing ninety-five per cent. of full marks in any three of the trials, and silver medals for eighty-five per cent.

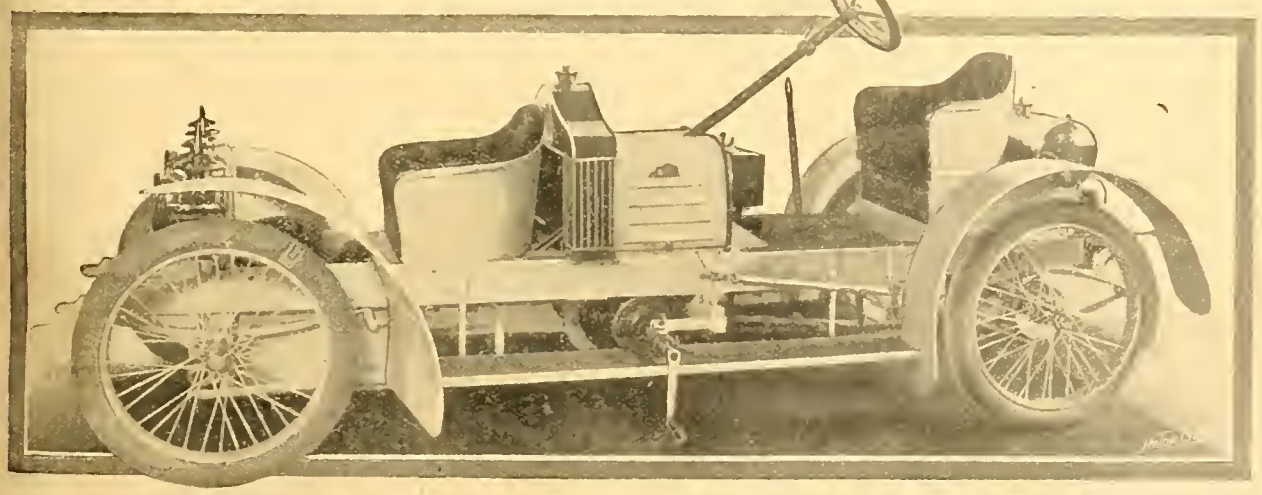
	Total marks gained.
W. J. Chambers (2½ h.p. A.J.S.)	60
B. D. Capper (Triumph)	60
C. W. Grogan (Triumph)	60
L. W. McKisack (Triumph)	60
J. Stewart (Triumph)...	60
D. H. O'Flaherty (Triumph)	58

J. J. Kennedy and M. J. Lindsay (Triumphs) did not finish.

In addition to the ordinary controls there were two "surprise" checks, and the rider who was closest to schedule at these points will be declared the winner of the day's trial. At the time of going to press these figures were not known, so the actual winner cannot be announced in this issue.

The run throughout was most successful, and all the riders who finished, except one, secured the maximum number of marks for the distance—ninety-five miles.

A CLEVER DESIGN OF SPORTING QUAD.



From "The Motor Cycle" Dec. 26th, 1910.

The Robinet Quad-car (a French make) is now four or five years old, but it remains one of the best solutions of the light four-wheeled passenger motor cycle.

THE MEA MAGNETO.

ONE of the most interesting magnetos yet placed on the market is the "Mea." This emanates from Stuttgart, the "Home of the Magneto," and is handled in this country by the United Motor Industries, Ltd., 45, Poland Street, W., whose manager, Mr. A. Hoffmann, is a keen motor cyclist, and has been connected with the industry from its infancy.

The outward appearance of the machine shows the magneto to be different from any other at present made. It stands but 3½in. in height, but otherwise its dimensions and weight are the same as other magneto machines.

Internally it works on the same principle as other magnetos, but the magnet is bell-shaped, and through it the armature runs horizontally. At the end of the magnet the contact breaker is attached so that the contact breaker and magnet are moved together when the spark is advanced or retarded, the object being to maintain the maximum position wherever the contact breaker may be set, so that as good a spark may be obtained at starting with the spark retarded as when it is fully advanced, thus obviating any possibility of damage from pre-ignition.

In a recent test made with a "Mea" magneto it was found that a good spark was obtained at 150 r.p.m. at all positions of the contact breaker.

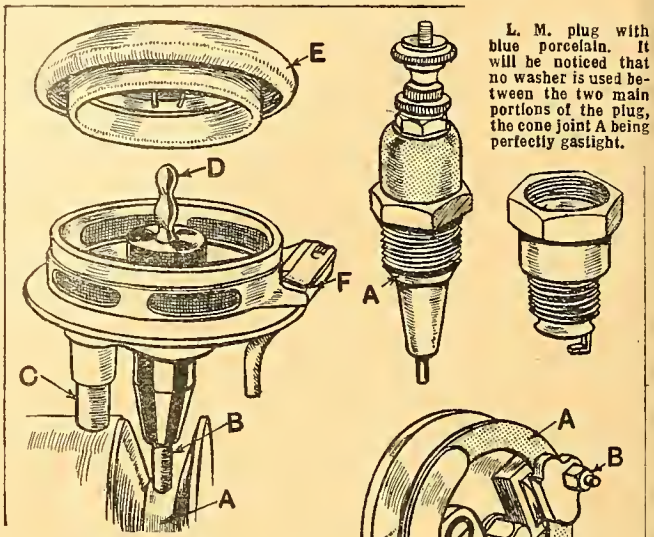
Both ends of the armature run on ball bearings, and means are provided for lubricating these. The spark gap is situated on the top of the instrument, and through it runs the high tension terminal D, which collects the current from the slip ring A. If the two screws on each side of the spark gap cover are removed the high tension collector brush B and the smaller brush C can be taken out for examination. The small brush C serves the purpose of forming an easy path for the current through the armature, and if it were not there the electricity would have to pass through the greasy ball bearings.

The condenser is carried at the end of the armature and between it and the slip ring.

The contact breaker departs somewhat from standard practice; the moving platinum point is carried on a horizontal circular spring A, and is pressed outward by a steatite roller C making contact with a steel cam on the end plate.

This magneto machine possesses the advantages of being compact, dustproof, and absolutely waterproof, while the maintenance of a good spark in whatever may be the position of the contact breaker, and the increased range of advance, namely, 45°, as against about 30° of the average magneto, renders the machine most suitable for motor cycles.

The L.M. plug, also sold by the United Motor Industries, is suitable for use with the Mea magneto. It has no washer between the upper portion and the plug shell. Instead there is a gastight cone joint, which, unlike a washer, cannot deteriorate, but totally prevents any leakage. These plugs are provided with a twice baked porcelain insulator, specially designed to stand the heat of an air-cooled engine. We have used these plugs for many years with great success.



L. M. plug with blue porcelain. It will be noticed that no washer is used between the two main portions of the plug, the cone joint A being perfectly gastight.

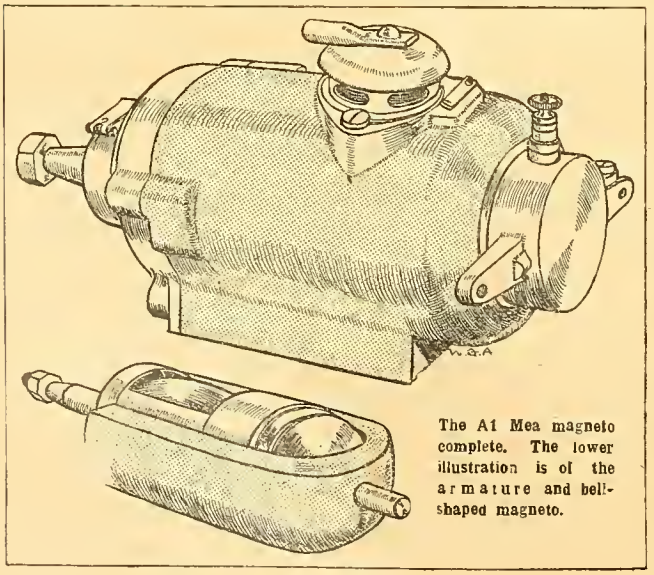
Details of the Mea magneto.

Spark gap, cover, and high-tension terminal.

A.—Slip ring.
B.—Carbon brush to H.T. terminal.
C.—Carbon brush, forming a path for the current through the armature.
D.—High-tension terminal.
E.—Spark gap chamber cover.
F.—Lubricator.

Contact breaker.

A.—Circular spring.
B.—Platinum point holder.
C.—Steatite roller, which, coming into contact with cam on end plate, raises the circular spring, causing the points to separate.



The A1 Mea magneto complete. The lower illustration is of the armature and bell-shaped magneto.

THE ORIGIN OF JOHN-O'-GROAT'S HOUSE.

There is probably no individual whose name is so universally recognised, concerning whose personality so little is known, as the obscure individual John of Groat, or the domicile named after him.

A correspondent in the Inverness *Highland Times* gives a version culled from the "Statistical Account of Scotland, 1793," wherein it is stated that three brothers, Malcolm, Gavin, and John de Groat, came north bearing a letter from James IV. commending them to the countenance and protection of his loving subjects in Caithness. They acquired some land, and in the fulness of time there came to be eight proprietors bearing the name of Groat. Then a question of precedence arose which the chronicler hints had every appearance of culminating in a fight. The question was which of them had the right of "taking the door and sitting at the head of the table." However, John de Groat, who was proprietor of the ferry, assured them that if the neighbours got wind that the house of Groat was divided against itself they would annex their property, pledged himself to settle the question of seniority to their entire satisfaction.

Ere the next annual gathering came round the astute terryman built an octagonal house with eight doors and windows in which he placed an octagonal table, and on the festive occasion he desired each of his seven kinsmen to enter by his own door and sit at the head of the table. This was John-o'-Groat's house, in witness whereof—

"The particulars above-mentioned were communicated to Mr. John Sutherland of Wester, above fifty years ago by his father, who was then advanced in life, and who had seen the letter wrote by James IV. in the possession of George Groat of Warse. The remains of the oak table have been seen by many now living."

LEADING MOTOR CYCLE CLUBS

J. S. Fulton, vice-captain, who was formerly secretary.

A. Gordon Bostock, the present hon. sec.

THE GLASGOW M.C.C.—A PIONEER SCOTTISH ORGANISATION.

THERE is some doubt as to whether this was the first motor cycle club to be established in Scotland, but if not actually the first, it was a very close second. It owed its foundation to Mr. H. White Stevens, who in 1902-3 was an enthusiastic rider of an Excelsior motor cycle, and who was the first secretary. With him was associated Mr. J. F. Bradford, who was the first president.

During the first two years of the club's existence the objects were more social than competitive, but in 1904, when the post of secretary was taken by Mr. J. S. Fulton, a start was made, and two hill climbs were organised. These spring and autumn climbs have been carried out each succeeding year, and are extremely popular. The first climb was held at Stockiemuir and the second at Lennoxtown, both hills now being judged beneath the notice of the modern motor cyclist.

The spring hill climb in 1906 attracted an entry of over fifty riders—a record entry for Scotland at the time, and beating many Southern clubs.

These climbs are always interesting, and some very fine work has been seen at Peesweep, notably in the spring hill climb of 1910, when A. G. Bostock, on a 3½ h.p. Bat-Jap, took the hill at over forty-six miles an hour, setting up a record for single-cylinder motor bicycles which has not yet been beaten.

D. S. Baddeley, president.

Another hill that brings out the abilities of the members is Stoneymoulin, a rough track with a gradient of over 1 in 5, intersected by deep gullies, which on the day of the competition are bridged by narrow strips of turf. This "brae" is a favourite at present, but, like Peesweep, will probably be passed over by the club in favour of something more severe.

In 1907 the Glasgow M.C.C. co-operated with the Dunedin M.C.C. (now Edinburgh M.C.C.) in running a 12 hours' reliability trial, which was a great success, and was repeated the next year.

In 1908 and 1909 the club competed in the inter-club contest for the Hamilton Shield, and for the last two years has taken part in the competition for the Dobson trophy, but without success; in one instance the team was only robbed of victory by a puncture in the last half-mile.

The Growing Membership.

In 1903 the membership was 22; in 1904, 25; in 1905, 37; in 1906, 52; in 1909 the members totalled nearly 60, and at present there are more members than at any previous period. In 1909 the club took the momentous step—for a Scottish club—of holding half of the weekly runs on Sundays, and this seems to have worked well.

Last winter the club held a social, at which a paper was read by one of the members: the function was open to all motor cyclists, and was much appreciated. A similar meeting will be arranged during the present session.

The riding programme for 1910 included two club tours, spring and autumn hill climbs (open), a twelve hours' reliability trial, petrol consumption trial, and flexibility and speed-judging contests, all of which were well supported. For 1911 a programme of great attractiveness is being prepared.

A Hard Working Official.

Of the original members there remain only three, these being Messrs. Fulton, Jennings, and Sinclair. Mr. J. S. Fulton was for five years hon. secretary, and has done more work for the club than any other member. On his resignation of the secretaryship the members marked their appreciation of his efforts by presenting him with a gold watch. For the past two years he has acted as vice-captain.

The president is Mr. D. S. Baddeley, a rider who possesses no fewer than six London-Edinburgh gold medals, and who invariably makes a good show in hill climbs on his powerful twin. The motor cycles he rides invariably bear his own name, but he has used J.A.P., Peugeot, and N.S.U. engines. The captain, Mr. William Deans, is one of Glasgow's oldest motor cyclists, and is a regular and successful competitor in club competitions.

Mr. Gordon Bostock, the hon. sec., has done very well in Scottish competitions on road and track on his 3½ h.p. Bat. Amongst the committee Messrs Roberts, Dickie, and Bilbe may be mentioned as willing workers in all that will further the club's interests.

Henry S. Bilbe.

MOTOR CYCLE TAXATION.

FOR some time past a conference has been held between representatives of the R.A.C. and Associated Clubs, the A.A., the M.U., the Society of Motor Manufacturers and Traders, etc., to discuss the inequalities and injustices of the existing taxation of motor cars and motor cycles. It is the idea of the conference proper that if adequate representation were made to the Chancellor of the Exchequer of the various injustices under which motorists suffer something might be done to ameliorate the existing conditions.

Nine resolutions were agreed to, and these will be submitted to the next meeting of the R.A.C. General Committee.

The first resolution reads as follows: "That in the opinion of this conference no sufficient reason can be shown on general principles for any additional taxation on motor vehicles."

Resolution 5 reads:

"That in respect of motor cycles and motor attachments of not more than 2 h.p. there should be a tax of 10s. per machine."

The conference expressed the opinion that £1 per annum is an unfair tax on motor cycles of 2 h.p. and under, and pointed out that the reduction of the tax by one half for the smaller horse-power would leave untouched the majority of the motor bicycles in regular use.

Resolution 7 is "That quarterly licences should be granted at one-third of the annual charge."

A majority recommendation that carriage licences be increased 50% is one which all motor cyclists will agree is fair, particularly when it is taken into account that a 1¾ h.p. motor bicycle does no more harm to the roads than a pedal bicycle, and yet its owner is called upon to pay 5s. more per annum in taxation than a two-wheeled trap drawn by a horse and carrying four people.

THE FORTHCOMING LAMP TRIALS.

A Few Criticisms and Suggestions.

AS long ago as January, 1909, a paper on motor cycle lamps was read before members of the A.C.U. by a keen amateur, and published in our issues for January 27th and February 3rd and 10th of that year. The author of that paper has good grounds for feelings of self-congratulation, for the lines he sketched out for the future development and improvement of lamps have been faithfully and successfully followed by most of the makers. Up to that time the aim of all manufacturers had been lightness at all cost, as the chief complaint had been the breaking of lamp brackets. But in that paper was openly preached for the first time the gospel of the heavy, efficient, indestructible lamp and the plea that makers would discard the ordinary type of bracket and adopt a forked bracket attached to the stem of the handle-bars. We believe there was then only one lamp so turned out.

The paper referred to started the lamp makers off on the right tack, and now there are many lamps which entirely satisfy most of the tests applied in the aforementioned paper. Accordingly the time has come for some further tests to be applied and lines indicated for future development and improvement. Herein lies the value and scope of the lamp trials to be held by the A.C.U. at Brooklands on Thursday, February 9th.

And hereby arise one or two points for criticism as regards the regulations laid down for the trials, which were published in our issue for January 12th.

The Main Test.

The main test, or what will prove to be the main test, is that the generators are to provide gas for four hours continuously. Why? Motor cycles are seldom ridden for four hours at a stretch at night, even if they carry enough petrol for the mileage. There is little hardship in having to re-charge a generator at the end of every three hours, when most riders would be glad to stretch their legs and the majority would think about filling up the petrol tank. So it seems rather a hardship that a lamp which gives a grand light, is easy to refill, easy to clean, and light to carry, may quite possibly be placed lower in the list of awards than one which is loathsome to clean, a nuisance to refill, and has various other objectionable features, but has a generator with an enormous carbide container, and therefore fulfils the primary test in these trials.

The lamp we want is one which will give us as much light as we require with as little trouble as possible. This means that the points to go for are simplicity of cleaning and refilling, plain exteriors, short outside tubing, ease for separating the generator from the lamp (*i.e.*, something better than having to push the tubing on and off a nipple), very strong construction, yet as light and as sightly as possible, and the generator easily accessible while riding and easily taken off the machine.

In all these respects the small, simple lamp is postulated, and we fully approve of the type which has now been evolved, in which a strong, plain, lens-mirror head light is carried on a bracket attached to the handle-bars, and a generator is carried on a back extension of the same bracket, or a separate vertical bracket on the top tube.

With the above conditions granted, the amount of carbide carried depends on the size of the carbide container. We feel that the maker should be left to design this. If it is too small, his customers will complain, but if it is merely enlarged to conform to an arbitrary condition laid down by the A.C.U. judges, the general appearance will suffer, and, what is more important, the bottom of it will come as low as to foul the tank fillers or the top tube unless the handle-bars are raised.

The Photometric Test.

As regards the other regulations, they are obviously drafted on the lines of the car-lamp trials carried out by the R.A.C. about two years ago. The photometric test is the most interesting, though it is as well to realise that this can only be comparative: it is practically impossible to make it absolute. The system employed will probably be an electric lamp, lighted by an accumulator battery of known trustworthiness, and enclosed in a lightproof box with a few openings in front covered with semi-opaque paper.

By moving the whole apparatus nearer to, or further from, the lamp under test, a point is found for each lamp at which its light exactly equals that of the standard in the box. (The idea is that nearer the tested lamp the light of the standard will make the openings in the box appear dark, but further away the standard will outshine the tested light and make the openings appear bright; there is only a space of about a foot within which error is possible, granted the reliability of the standard.)

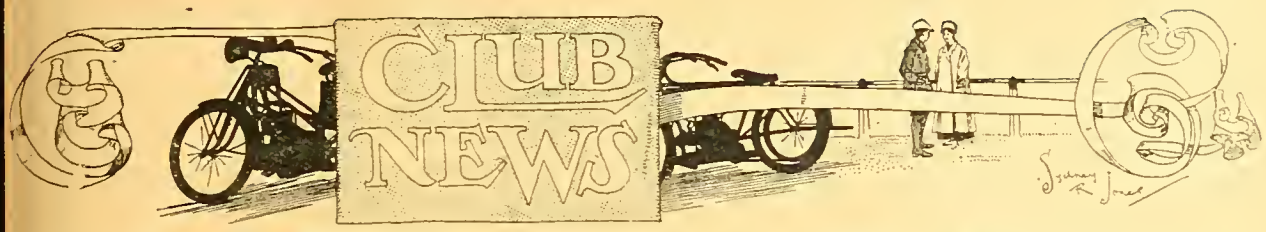
A Few Points for Competitors.

For success in this test, makers will be well advised to rig up a makeshift photometer and try various lamps against it. A slight difference in the working of the lens, or the angle of the flame to the lens, or the distance of the flame from the lens, or the size of the orifice in the burner, or the type of burner itself, or a hundred and one other details, may make one lamp give a decidedly better light than another.

By taking this trouble competitors will at least know that they are entering their two best lamps.

In the R.A.C. trials, after the photometric test of the main, central beam, the judges moved the photometer a predetermined distance to each side (supposed to represent the situation of a ditch when going round a corner) and there held a further test. This is apparently to be done in the coming trials, though the test is almost better carried out by the eye! What is wanted is just enough light to see the ditch without enough to blind people at the side of the road. The soft rays not projected by the main lens, especially when this is at the back of the flame, are quite enough for this purpose.

Therefore we would submit to the A.C.U. judges that they should not look for a *big* light in this side test, but for the smallest light which will overcome the standard at a predetermined distance. What this distance is depends entirely on the strength of the standard: the more powerful it is, the further it should be taken for these side tests.



Reading and District M.C.C.

A general meeting will be held at headquarters, the White Hart Hotel, Oxford Street, at 9 p.m., Friday, Feb. 3rd, to elect officers and arrange a programme for 1911.

York County M.C.C.

The A.G.M. will be held at 8 p.m. to-morrow (Friday), at headquarters, the Grand Central Hotel, Briggate, Leeds. Prospective members are cordially invited to attend.

Suggested Club for Folkestone.

A few motor cyclists in the Folkestone district of Kent are considering the formation of a club. It has been suggested that the headquarters should be at Folkestone. Riders interested in club life in the district should write to Mr. A. A. Cole, "Elmdale," Napier Gardens, Hythe, Kent.

Lancashire M.C.C.

This club held its annual dinner on Thursday last, at Catterall's Restaurant, Preston. There were about sixty-five members and friends present. After dinner the company adjourned to the scientific society's room, where the prizes won during the past year were distributed. A cinematograph exhibition was then held, at which films of the Tourist Trophy race and other events were shown. Altogether a very pleasant evening was spent.

Sutton Coldfield A.C.

The A.G.M. took place on Thursday last at headquarters. The finances of the club are in a sound condition, and in moving the adoption of the balance-sheet, the Chairman pointed out that a suitable amount had been reserved for last year's prizes, leaving a credit balance of £18 14s. 9d. On Friday, Feb. 10th, at 8 p.m., Mr. S. C. Perryman will read a paper, at headquarters, entitled "Inns and Hostelries." The annual dinner is fixed for Saturday, February 18th.

Lincolnshire A.C. (Motor Cycle Section).

The above section of the Lincolnshire A.C. has its own officers, finances, and organisation, and is for all practical purposes a separate club. Working, however, with a strong club like the Lincolnshire A.C., the members have many advantages for a nominal subscription of 6s. They are affiliated to the A.C.U., and can participate in the club competitions, etc. Intending members should write to the hon. sec., Mr. W. Howell Quine, Parkdale St. Catherine's, Lincoln.

Exeter and District M.C.C.

At the A.G.M. at the club's new headquarters at the Exeter Garage Co.'s premises, Paris Street, Exeter, the following officers were elected for 1911: Captain and chairman, J. Milner, Newbridge, Upton Pyne, near Exeter; secretary, A. M. C. Scott, Dunsford, near Exeter; treasurer, A. O. Tucker, 27, Devon Square, Newton Abbot; vice-captain, S. J. Saunders. The club decided to organise an open hill-climb under a liberal classification early in the summer, and to avoid clashing the secretary would be glad to receive the fixture lists of other clubs.

Westmoreland M.C.C.

At the annual meeting it was announced that the club had a balance of £4 13s. 8d. in hand at the bank. The membership was sixty-two. Fourteen competitions had been held. The prospects for next year were decidedly bright. The annual open hill-climb on Shap Fell next Easter promised to exceed all expectations. Four gentlemen had offered £5 5s. each; also the Palmer Tyre Co. had offered two covers with air tubes. It was proposed to have at least four classes. The committee had purchased, at a cost of £10 10s., a field telephone, consisting of two instruments and three half-mile lengths of double insulated waterproof wire. The sum of £10 4s. has been subscribed by members.

Bolton and District M.C.C.

At the annual general meeting Mr. Arthur Batten was elected president and Mr. Stanley Groom chairman. Mr. Arthur Richards accepted the honorary secretary's post for another year, and Mr. Fishwick that of captain. The club has withdrawn from the A.C.U. and reduced the subscription from 7s. 6d. to 5s.

Helensburgh M.C.C.

This is a new club which has recently been formed, and the hon. secretary, Mr. Wm. Watt, 53, Sinclair Street, Helensburgh, will be glad to hear from all motor cyclists in the neighbourhood who may desire to avail themselves of the advantages the club has to offer. A fixture card of runs, competitions, etc., is in preparation. The ordinary subscription is 5s. per annum.

Derby and District M.C.C.

On Saturday, the 18th inst., a winter trial run will be held, the route being Derby to Buxton and return. Mr. Edgar Russell has kindly offered a cup for this competition, to be competed for annually. The start will be at 3 p.m. from the Five Lamps, Duffield Road. The name and address of the secretary are Mr. A. Bennett, 13, Wilson Street, Derby. Entry fee 1s.

West Lancashire M.C.C.

The first annual general meeting was held on Wednesday last week. The chair was occupied by Mr. G. Arthur Gregson, who was unanimously re-elected captain, and Mr. Hugh Gibson vice-captain. It was resolved that the rule limiting membership to those residing within a radius of twenty miles of Southport be cancelled, and that the name of the club be altered to the West Lancashire Motor Cycle Club. An insurance scheme was discussed by which members would secure an advantage, and it would also be an attraction to prospective members.

The proposed hill-climb on Bonister Pass was discussed with much enthusiasm. Mr. R. Holford Jones, 9, Westbourne Road, Birkdale, was re-elected hon. secretary and treasurer, and will be glad to hear from intending members.

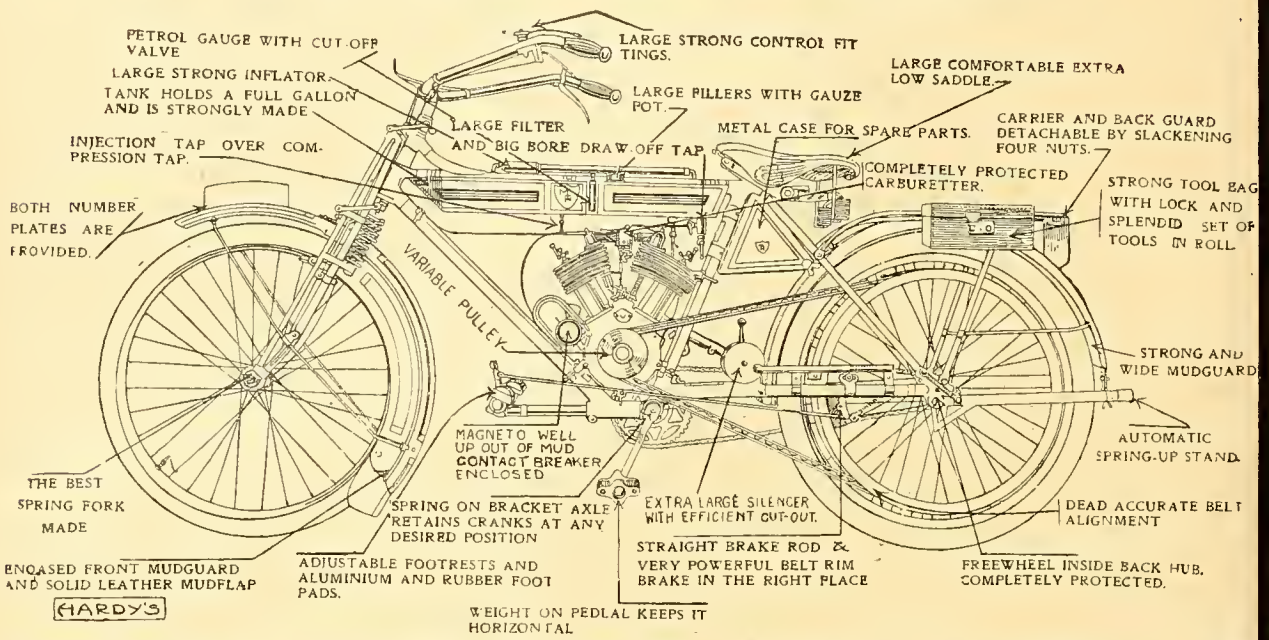
Streatham and District M.C.C. and Surrey M.C.C. Inter-team Trial.

The joint winter reliability trial for Mr. B. Marian's Challenge Cup is to be held on Saturday next, the 4th inst. The start will take place at 8.30 a.m. at the King's Head Hotel, Epsom. Each club will be represented by a team of six riders. The winning team will be the one whose members gain the greatest number of awards, a silver medal counting for this performance as the equivalent of two bronze medals. The route will be as follows: Epsom, Ewell, Nork Park, Burgh Heath, Reigate, Redhill, Bletchingley, Godstone (17½ miles), Oxted Road Corner, Oxted, Westerham, Hawley's Corner, Keston, Addington, Sanderstead, Sanderstead Road, Brighton Road, Purley, Caterham, and Godstone (29½ miles). This circuit is to be covered four times in all, total 118 miles. After the mid-day halt the route will be Bletchingley, Redhill, Reigate, Burgh Heath, Nork Park, Ewell, and Epsom (17½ miles), to be covered twice. Total distance 153 miles. The restart will take place from the Clayton Arms, Godstone, at 2 p.m., under the same conditions as the first start. Competitors will be required to sign the checking sheet at Epsom. Any competitor who makes a stop other than a traffic stop in this observed section, or who fails to ascend Westerham to the satisfaction of the judges, will be disqualified from receiving a silver medal.

Mr. J. H. Jeffery, hon. sec. Streatham and District M.C.C., 10, Daysbrook Road, Streatham, S.W., will be glad to hear from any reader who will be good enough to assist by acting as an official in this competition.

A few POINTS on the grey M-R

THE MOST PRACTICAL LIGHTWEIGHT MOTOR CYCLE OF 1911.


PETROL GAUGE WITH CUT-OFF VALVE
LARGE STRONG INFLATOR
TANK HOLDS A FULL GALLON AND IS STRONGLY MADE
INJECTION TAP OVER COMPRESSION TAP.
BOTH NUMBER PLATES ARE PROVIDED.
LARGE STRONG CONTROL FITTINGS.
LARGE PILLERS WITH GAUZE POT.
LARGE FILTER AND BIG BORE DRAW-OFF TAP.
METAL CASE FOR SPARE PARTS.
LARGE COMFORTABLE EXTRA LOW SADDLE.
CARRIER AND BACK GUARD DETACHABLE BY SLACKENING FOUR NUTS.
COMPLETELY PROTECTED CARBURETTER.
STRONG TOOL BAG WITH LOCK AND SPLENDID SET OF TOOLS IN ROLL
VARIABLE PULLEY
STRONG AND WIDE MUDGUARD
AUTOMATIC SPRING-UP STAND.
MAGNETO WELL UP OUT OF MUD CONTACT BREAKER ENCLOSED
THE BEST SPRING FORK MADE
SPRING ON BRACKET AXLE RETAINS CRANKS AT ANY DESIRED POSITION
EXTRA LARGE SILENCER WITH EFFICIENT CUT-OUT.
DEAD ACCURATE BELT ALIGNMENT
STRAIGHT BRAKE ROD & VERY POWERFUL BELT RIM BRAKE IN THE RIGHT PLACE
ENCASED FRONT MUDGUARD AND SOLID LEATHER MUDFLAP
ADJUSTABLE FOOTRESTS AND ALUMINIUM AND RUBBER FOOT PADS.
FREEWHEEL INSIDE BACK HUB, COMPLETELY PROTECTED.
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"Dear Sirs—I have pleasure in informing you that the 1910 Two-speed Humber Motor Cycle, which I purchased in May last through your Belfast agent, Mr. Alexander, has given me the greatest satisfaction. I have ridden it almost 4,000 miles, and during that time no repairs of any kind have been necessary, which I consider a splendid performance."

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AGENTS EVERYWHERE

M8

Club News.—

West Essex A.C.

The motor cycle challenge cup has now been competed for, the committee having accepted and passed the following result: 1st, W. E. Gunnett (3½ h.p. Triumph), cup and medal; 2nd, A. M. Bowley (2¾ h.p. Douglas), medal. Although the roads were in wretched condition the competitors rode very close to schedule times throughout the run.

Western District M.C. (London).

A sub-committee has been appointed to discuss the programme of runs and competitions for 1911. Their decision, which will be awaited with great interest by all members, will be placed before the committee at a meeting to be held at the new headquarters, 4, New Broadway, Ealing, W., at 8 p.m. on Friday, February 3rd. Members are reminded that their subscription is now due, and should be sent to the hon. sec., Mr. V. Armstrong, Eden Hall, Montpelier Road, Ealing, W., who will also be pleased to forward particulars of membership to any motor cyclist in the district on application.

Cardiff M.C.

The annual meeting was held at the Park Hotel, Cardiff, on Thursday last, Mr. G. A. Horner in the chair. The hon. secretary's report and hon. treasurer's balance sheet were placed before the meeting and duly passed. The Chairman remarked on the splendid work done during last year, and the meeting then proceeded to the election of officers for this year. Lord Ninian Crichton Stuart, M.P., was elected president, with six vice-presidents, and a strong committee of twelve with Mr. Albert Williams as chairman. The hon. sports secretary is Mr. C. R. Pratt, 34, Taff Embankment, Cardiff; and hon. secretary and treasurer, Mr. H. B. Jotham, Whitchurch, near Cardiff.

The club has been appointed the local centre of the Automobile Association and Motor Union, the hon. secretary acting as local hon. correspondent of the amalgamated bodies.

Walthamstow M.C.

The fifth annual general meeting was held last week at headquarters, the Rose and Crown, Hoe Street. Mr. Geo. West occupied the chair, supported by the hon. sec., Mr. J. W. Percival, and Mr. W. H. Applebee, captain. Thirty-five members were present. Early in the evening Mr. J. Henbry formally presented the club with a silver cup. It is a handsome trophy 40 ozs. in weight and some eighteen inches high, and is given unconditionally. He was thanked by the captain on behalf of the club. The minutes of the last A.G.M. were confirmed, and the annual report and balance sheet read. There was an available balance of £24 10s. 9d. This did not include the cups and prizes presented to the club. There are seventy affiliated members. Messrs. A. J. Jackson and Alf. Eve, hon. auditors, said they had never examined books in better order, and the club was to be congratulated on having such an hon. secretary. (Applause.) The following officers were elected for 1911: President, Mr. L. Stanley Johnson; vice-president, Dr. Stanley Owen; hon secretary and treasurer, Mr. J. W. Percival; captain, Mr. W. H. Applebee; vice-captain, Mr. W. S. Low; and a committee of six. Mr. F. W. Applebee will represent the club on the A.C.U., and Mr. H. J. Beal was asked to continue his work as press secretary. A vote of thanks was passed to the chairman and retiring officers.

Northants M.C.C.

The annual dinner at the Stag's Head, Northampton, on Thursday last, under the chairmanship of the Mayor, Mr. S. Yarde, was an enjoyable function. Several visitors were present from Coventry, Nottingham, Paris, etc. The Mayor proposed the toast of the club, and touched upon Mr. A. E. Catt's famous ride. He also pointed out that motorists had a number of little grievances, and one in particular was against certain drivers of slow, heavy vehicles, who persisted in keeping to the middle of the roads. Another matter was the application of the Road Board funds. He thought the additional taxes on motors should be devoted to the improvement of the road surfaces.

The Hon. Secretary (Mr. C. T. Underwood) made an excellent speech in reply, and referred to the successful year the club has had. He also said that at the last annual dinner there were only sixteen members present; this year there were over fifty.

Sheffield and Hallamshire M.C.C.

The second winter whist drive and supper of the Sheffield and Hallamshire M.C.C. was held at Hudson's Restaurant on the 26th ult., when Mr. F. Dover presided over a large company. Amongst those present were the men who have brought the name of the Sheffield and Hallamshire Club well before the judges of many open competitions of the country.

Mr. Sawer, gold medalist London-Exeter 24 hours' run, and Mr. Dan Bradbury, speed, club record holder, and hon. sec., were the M.C.'s in chief.

Mr. E. Dover in presenting the prizes said the success of the meeting had given him pleasure in announcing the next drive would be at the same place in about three weeks time.

Oxford M.C.C.

The annual meeting of this club took place on Wednesday, January 18th, at the Creamery Café, Oxford, Mr. H. A. T. Packford presiding. The secretary stated in his report for 1910 that the total membership of the club was eighty-seven, and the number of new members elected in 1910 was forty-four. During the year the club were favoured with visits by two well-known motorists, the Rev. B. H. Davies and Mr. W. G. McMinnies, who read papers on "Aeroplanes" and the "Tourist Trophy Race" respectively; in both cases the lectures were illustrated by lantern slides. The secretary also pointed out to the members the valuable advantage of "free legal defence" which the Auto Cycle Union, to which this club is affiliated, had given during the past year, whereby members are entitled to free legal defence in any court in England and Wales under any summons arising out of the ownership of a motor car or motor cycle, and that one member had already benefited under this scheme. The trials secretary also gave an interesting report of the competitions held during the season, and also gave details of the open hill-climb arranged for April 8th next. The following officers were elected for the present year: Captain, J. F. Salter; vice-captain, H. Braithwaite; hon. treasurer, F. G. Alden; hon. secretary, W. A. Matthews; hon. trials secretary, H. G. Hill; hon. auditor, Ernest Lewis, A.C.A.

North-west London M.C.C.

The annual general meeting was held at headquarters on the 18th ult., and was well attended. The officers for 1911 were elected, Mr. Victor Hart being again president and Glynn Rowden captain, while G. H. Hollis and C. A. Stern remain the hon. treasurer and hon. secretary respectively. H. J. Pooley takes the place of H. V. Bate as vice-captain, and on the committee C. Simpson and Hal Hill take the places of H. J. Pooley and T. G. Blundell. The captain, G. Rowden, gave a short *résumé* of the principal events for this year. The opening run will be on Sunday, March 5th. It is hoped that a number of members will attend the paper on "Competition Riding," which will be read at headquarters on February 3rd by H. Karslake. A discussion will follow, and also a "breakdown" competition.

The International event, in which the North-west London M.C.C. and the M.C.C. de Lyons are to take part, is now assuming a more definite shape than was conveyed in our preliminary announcement a week or two ago.

As far as the N.W.L.M.C.C. is concerned, the event will take place as a combined tour and competition. The tour will extend over ten days or so, including the August Bank Holiday, and as far as can be seen at present the route taken will be by Southampton and Havre and by road to Lyons, through some of the most beautiful country and on the best roads in France.

At Lyons a warm welcome has been promised by the M.C.C. there, which has fallen in with the suggestions made by the English club with the greatest cordiality. In the case of the chief event of the year, the "Circuit de Rhone," a special exception has been made by throwing it open to the members of the N.W.L.M.C.C. in addition to the members of the Lyons Club.

Various outings and excursions will be arranged, and it is hoped that there will be a special series of speed events in addition to the "Circuit."

The N.W.L. Club has offered a special cup for competition in the form of an Inter-club Hill Climb.

Quite a satisfactory entry has been already promised as regards the English club, and there seems every indication that this first International inter-club event is going to be enthusiastically supported.

A New Siren.

Messrs. Smith and Dorley, motor accessory dealers, Ramillies Street, Great Marlborough Street, W., have just placed on the market a motor cycle syren of excellent tone. The device is driven off the front wheel of the bicycle, and is brought into action by means of a Bowden lever. It should appeal to those who do not find the usual horn sufficiently loud.

An Ingenious Combination.

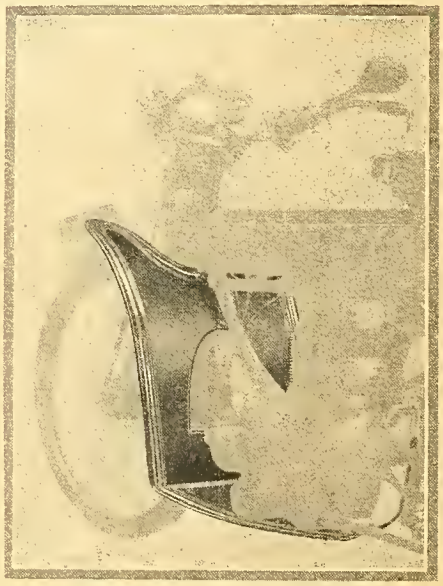
Our attention has been recently called to the "Dirfrees" overboot and legging, which is manufactured by Messrs. Joseph Dawson, bootmakers, 23, London Wall, E.C., from the design of Mr. L. A. Sandeman. It is an overboot and legging combined, and is made of leather throughout, fastening up the sides with patent clasp fasteners, and has been designed to provide in one article a complete protecting cover for the foot and leg of the wearer. It is made with a serviceable leather sole and box-calf uppers and leggings, or, if desired, it may be purchased lined with fur and with golosh uppers and leggings, when it would be very warm. A pair of these overboots should be especially valuable to country doctors, since they enable them to enter a sick room perfectly clean and dry.

Business men will also find them an advantage, as they can ride to their customer's door, and after removing the Dirfrees they can appear before a client in a spick and span condition. Loops are provided enabling the overboots to be hung over the handle-bars till the owner returns. The accompanying illustrations render the nature of the article perfectly clear. The overboots can also be obtained from Dunhills, Ltd., Euston Road, N.W.

Dirfrees overboot, which should appeal to medical and habitual winter riders.

Improvements in Mudguarding.

The special mud-shield illustrated has been designed by Messrs. Surridge and Hayles. It will be seen from the reproduction that it is of graceful form, and is reminiscent of the front wing of a motor car. It protects the rider's legs and the magneto, and it does not shield the engine. It is fastened by thumb-screws and a clip on the down tube of the motor cycle frame and by a similar method on the bottom bracket. The model illustrated is the first yet constructed, but in future types the hole will be rather shorter and narrower, so as to give the rider better protection and to protect the magneto better. The shield may be obtained from Mr. R. Surridge, the maker of "Holdtite" patches, 58, George Street, Camberwell, S.E.



Surridge's special mudshield and under screen.

Rex 1911 Catalogue.

The Rex 1911 catalogue was issued last week. It is an interesting brochure describing in detail the various models of Rex motor cycles from the 2¾ h.p. Junior to the 7 h.p. Speed King. The mechanical features receive especial attention, and the clear illustrations should help considerably those keen amateurs who prefer to do their own adjustments. The list of successes during 1910 forms quite a formidable total. Applications to the Rex Motor Manufacturing Co., Ltd., at Coventry, for copies will receive prompt attention.

The Price of Iridium.

Owing to the increased cost iridium, Mr. J. E. Brown, 38, Herbe Road, Plumstead, S.W., has be compelled to raise the price of t Jebron contacts.

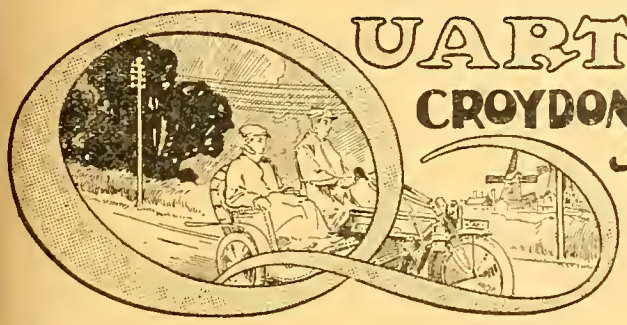
Soldering Petrol Tanks.

Correspondents often write to us garding the danger of soldering pet tanks in which there may be a petrol vapour. Mentioning this mat to Mr. A. Davison, the well-known ta manufacturer, the other day, he formed us that he is of the opini that it is quite safe to repair the ta with an ordinary soldering iron, t temperature of which does not rea red heat, but to attempt the repair wi a blow-lamp would be to court certa disaster.

The All-in-one Case.

Messrs. Thomas Smith and Co., Windmill Street, Tottenham Co Road, W., have introduced a spec hat case to be fastened on to the re carrier of a motor bicycle. The fi was prompted to do this through let 5234 in our issue of the 29th Dece ber. The hat case is a handso and well-made article, and will ca a bowler or straw hat, spare air tu belt, folding Panama hat, boot-cle ing outfit, a shirt or sleeping suit, a sundry odds and ends. It is wat proof and dustproof. The case made in waterproof canvas, a leather — the latter is natura the more expensive. We feel qu sure that such an accessory h been badly wanted for some yea and have no doubt that Messrs. Ta lor and Co., 21a, Store Street, Totte ham Court Road, where the ca may be seen, will find a good dema for them.

A correspondent recently asked for a hat cas His wish has been gratified by the introduction o Smith's case, sold by H. Taylor and Co.



QUARTERLY TRIAL.

CROYDON-HASTINGS-CROYDON.

A Sporting Course.

30 OUT OF 65 COMPETITORS ACCOMPLISH NON-STOP RUNS.

THE weather on Saturday last was all that could be desired, as the day broke fine and cloudless, and soon after the start the heat of the sun became quite appreciable. Of the sixty-six entrants, W. Cooper was the only one not to start, as his Bradbury was rendered *hors de combat* in a practice spin on Chalk Pit Hill. Outside the Swan and Sugar Loaf Hotel there is a convenient open space,

A bunch of competitors commencing the ascent of Warlingham. There is a right angle turn to the left at the hill foot.

which soon after 8 a.m. was packed with competitors, spectators, and officials. Many interesting machines were to be seen. The Morgan runabout, with engine in front and the petrol tank placed conveniently behind, in an accessible position, which at the same time protects the knees of the driver from the wind. Fletcher was there with his Douglas, which bore the seals of the Scottish Six Days' and the A.C.U. Land's End to John-o'-Groat's Trials. The New Hudson with chain transmission, a neat aluminium carburetter shield, and the Armstrong three-speed gear attracted considerable attention. There was also to be seen the latest pattern T.A.C., with improved front mudguard, luggage carrier, clutch stop, and a new high-tension distributer which is quite impervious to wet. The Clyno was also represented with enclosed chains and the exhaust pipe carried right to the rear. A new comer was the 2½ h.p. Plint, fitted with a little two-stroke engine and carrying the magneto under the bottom bracket. Quite a novelty appeared on the scene just before the start. This was a small machine (not competing in the trial) fitted with a two-cylinder two-stroke engine with the cylinders placed side by side. The drive was by chain to the counter-shaft and thence to the rear wheel by belt. A gear box was carried on the bottom bracket.

The start took place punctually at 9 a.m. The men were marshalled up in numerical order, and sent off by Mr. C. A. Smith in pairs at half-minute intervals. Previous to the start, the two judges, Messrs. H. G. Cove and D. K. Hall examined the machines.

Warlingham Hill—An Unpleasant Surprise.

From Croydon to the start the road surface was excellent, but the competitors had an unpleasant surprise on striking the foot of Warlingham Hill. On turning off the main road and taking the sharp corner to the right, a steam roller was seen looming in the distance, hard at work at the top of the steepest portion. Despite these adverse conditions, and the fact that the surface was mostly muddy and very greasy at the top, the men did really well. The following, however, were unfortunate enough to fail: H. Riddle (2¾ h.p. Forward), H. Reed (3½ h.p. Dot-Precision), G. Griffiths (2 h.p. M.R.), A. N. Cunnington (3½ h.p. Premier), H. J. M. Hughes (3½ h.p. Premier and sidecar), A. F. Plint (2½ h.p. Plint. P. Butler (4 h.p. Dot) arrived rather late at the hill. A really splendid ascent was made by Philipp on his Scott. The remaining competitors came up in good form. As Warlingham Hill was not an observed test and did not rank in importance with Westerham and the other timed hill, we do not think it necessary to give a report of every man's performance. Having watched a few of the men skilfully negotiate the corners and tackle the long and stiff gradient, we followed the course to the top of Westerham Hill. It will be remembered that the men had to start from the village and take the hill with hot engines, which is an innovation in A.C.U. trials. We noticed Eli Clark busy marshalling the competitors. The surface of the hill was in excellent condition, and this, added to the fact that there was no wind, rendered

At the top of Warlingham Hill. This ascent is only six miles from the start, and yet accounted for six failures. Who will still doubt that the trials are needed in winter?

Quarterly Trial.—

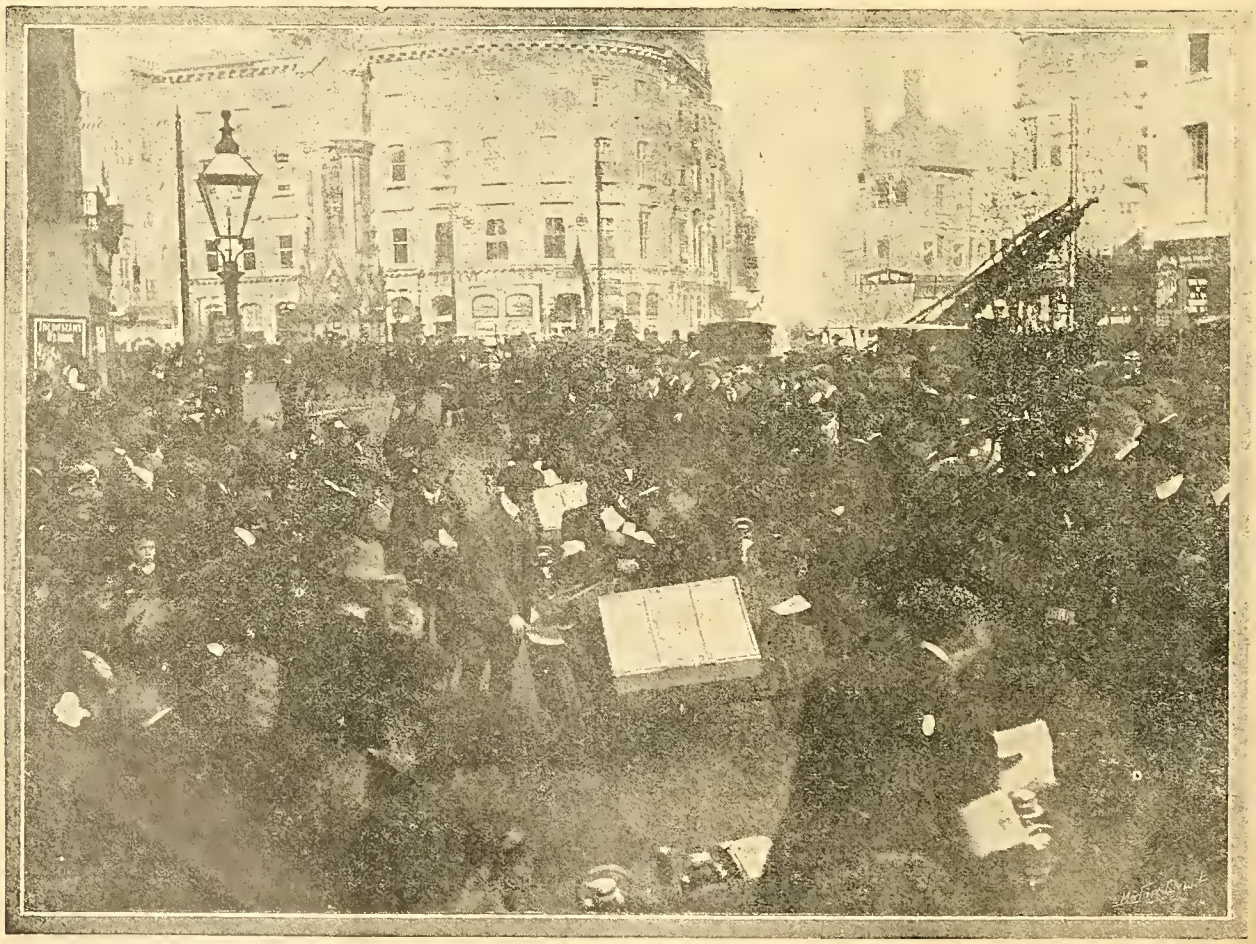
Typical hill-climbing conditions. W. B. Gibb (2¾ h.p. two-speed Douglas) making good use of his low gear to pass the poor panting horses on the one in seven gradient of Westerham.

the conditions ideal. There was practically no traffic, but two or three carts proved a nuisance, as their unfortunate horses could only take the hill by easy stages, and to restart they had to pull right across the road.

The Performances on Westerham.

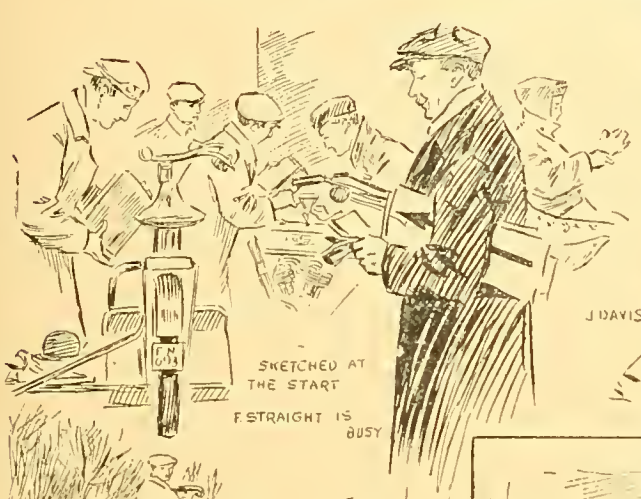
The following machines came up in good form: The two A.J.S. machines, Philipp (Scott), Woodhouse (Calthorpe), the Morgan runabout which came up in splendid style, Robbins (Humber), Arter on the James, and his colleague Pollock, Surridge (T.T. Rudge-Whitworth), Watkins (3½ h.p. Premier), Jones and Hawkins, who were similarly mounted, Houghton (Bradbury), Armstrong (Premier), Hill (two-speed Rudge-Whitworth), Wilberforce on the only Indian entered, Fletcher (two-speed Douglas), Buckman (4 h.p. Buck)—his first competition—Gray (3½ h.p. Triumph), Brown (Lincoln Elk), Hawkins (Premier), Dixon (2½ h.p. New Hudson)—its first appearance in public; Gibb (2¾ h.p. Douglas), Clifford Wilson and his colleague Oakley on T.A.C.'s (both on their *début*), Spread (Trump-Jap), Riddell (2¼ h.p. Forward), H. A. Cooper (3½ h.p. Bradbury), Jarvis (Triumph), Greaves (two-speed 2¾ h.p. Enfield), which was travelling well, Bailey (Clyde), Johnson (Triumph), Newman (Ivy-Precision), Greenhill (Douglas), Mundy (T.T. Triumph), Huskinson (Vindec and sidecar), Ware (8 h.p. Chater-Lea and sidecar), Applebee (Millennium, Lake and Elliot, and sidecar), Smith (Clyno and sidecar), Davis on his Double which made excellent practice on the hill, Higgs (A.C.), Portwine, who was similarly mounted, Hill, Stagg, Dixon, Mundy and Forbes, also on A.C.'s.

The following came up well but appreciably more slowly than the above, Arrow (3½ h.p. Premier), C. Burney (Rudge-Whitworth), Gray (3½ h.p. Humber and sidecar), and Atkings (5·6 h.p. A.C. sociable). The following pedalled: Islip (2¾ h.p. Enfield) and Hodgetts (1¼ h.p. M.R.) Those who were unfortunate enough to have to dismount were—Luce (8 h.p. Bat), who on remounting made short work of the hill, Cunnington (3½ h.p. Premier), Patterson (2¾ h.p.



Some idea of the large crowd at Hastings may be gathered from this photograph taken near the entrance to the Queen's Hotel.

THE QUARTERLY TRIAL SEEN IN PICTURES.



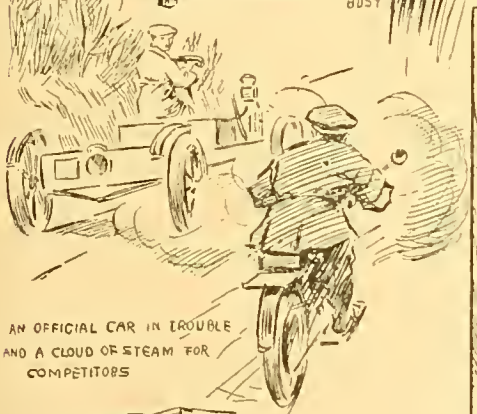
SKETCHED AT THE START

F. STRAIGHT IS BUSY

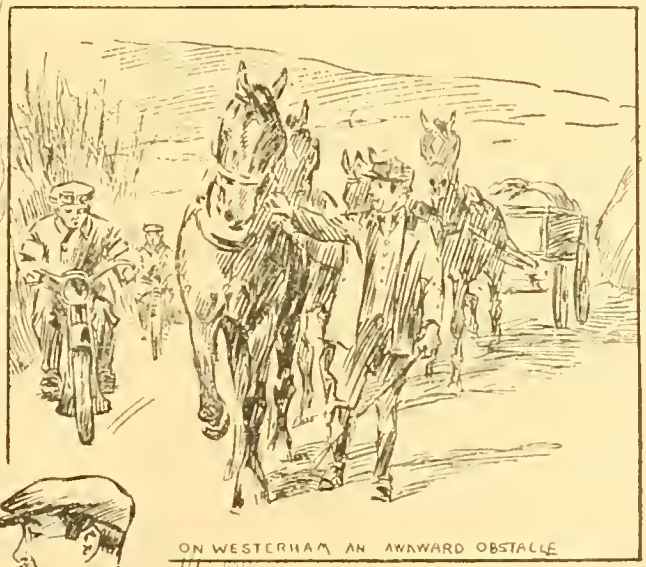
R. MARTIN

J. DAVIS

THE LADY DISMOUNTS TO ENABLE N°60 TO REACH THE TOP OF WESTERHAM



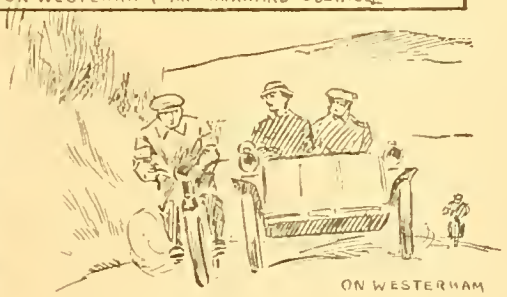
AN OFFICIAL CAR IN TROUBLE AND A CLOUD OF STEAM FOR COMPETITORS



ON WESTERHAM AN AWKWARD OBSTACLE

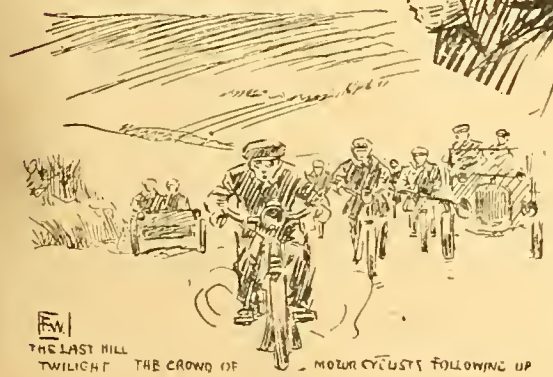
A CUP OF TEA AT THE "BULL"

COL. HOLDEN WATCHES THEM UP TITSEY

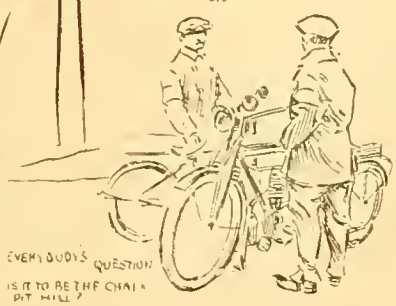


ON WESTERHAM

N°48 HAS A NARROW SHAVE PASSING A SOCIABLE AT SPEED



THE LAST HILL TWILIGHT THE CROWD OF MOTOR CYCLISTS FOLLOWING UP



EVERYBODY'S QUESTION IS IT TO BE THE CHAIR PIT HILL?

THE DOUGLAS UP THE HILL IN GOOD FORM

Quarterly Trial.—

V. Wilberforce (Indian) at the steep corner on Westerham. It will be noticed that he has adopted the method of leaning machine inwards and body outwards.

M.R.), Griffiths (2¾ h.p. M.R.), Hughes (3½ h.p. P. and M. with passenger on rear carrier), Butler (4 h.p. Dot), and Plint (2¼ h.p. Plint).

After Westerham the route continued over undulating country, and several times those competitors who were fortunate enough to possess free engines enjoyed a most exhilarating coast down long gradual inclines. From the summit of a ridge of hills magnificent panoramic views were obtained of the surrounding country. At Sevenoaks there were small crowds to witness the competitors ascend the long incline through the town. We noticed particularly, among others, a Bat, the Clyno sidecar, a T.A.C., a two-speed Douglas, and a Premier climbing in magnificent style. Near Tonbridge we passed a Triumph rider repairing a belt by the roadside, and a few miles further on Griffiths (M.R.) apparently effecting some adjustment to the carburetter.

Arrival at Hastings.

A rise shortly before reaching Lamberhurst was rather more than usually thick with grease, and we observed F. W. Applebee (3½ h.p. Matchless and sidecar) come to a standstill three-parts of the way up. We later overtook Greaves (Enfield), Mundy (Triumph), Fletcher (Douglas), and the three Rudge-Whitworths (ridden by C. S. Burney, V. J. Surridge, and Alan-Hill) going splendidly. The little Enfield was taking the hills in superb fashion. W. O. Oldham was driving a two-year-old Vindec and sidecar, which would do credit to any owner. The bicycle looked in spick and span condition, and better than some machines only three months old.

The going generally was very good, although the roads were somewhat narrow and treacherously greasy in parts. Occasionally the sun would burst forth in all its glory, making matters extremely pleasant. Probably the fact of the conditions being so good overhead had the effect of bringing out hundreds of spectators to cross roads, villages, and hills of more than ordinary calibre. Anyway, certain it is that public interest has never run so high in a Quarterly Trial. There was one more severe climb before reaching Hastings, for although not steep, it is quite a mile in length, and many were the "konks" towards the summit. Through St. John's Cross, and then three or four miles of tramlines until nearing the Queen's Hotel, where there was an avenue of spectators to guide the riders. There was a slight collision at the hotel entrance, two A.C. sociables and the Davis Double butting one another.

At the luncheon table speculation was rife as to whether Chalk Pit or Titsey Hill would have to be climbed, and quite a number divulged the fact that they had specially low gears (mostly in the neighbourhood of 5½ to 1) in anticipation that Chalk Pit would be selected.

It might have been a Spring trial to judge by the atmospheric conditions when the riders were despatched on their homeward journey. For five miles the route hugged the coastline until after passing through Bexhill, the now familiar A.C.U. arrows pointed due north to Ninfield and Gardner's Cross. The return run did not strike the writer as being so severe as the first section; at any rate, his two-speed lightweight never called for its low gear until Crockham Hill was reached. The roads, however, were still heavy and greasy in parts, especially under trees, so that the course was not so simple. Once again we passed Applebee, who this time complained of his exhaust valve having stretched, afterwards Higgs and Surridge going well.

The Soothing Cigarette.

We were much amused at a little incident we observed. Stanley Webb, who was a travelling marshal on his Bradbury, stopped to light two cigarettes, then hurriedly hopped on again and caught up his friend H. A. Cooper, a competitor, and handed a cigarette to him. Wilson tried conclusions with a dog on his three-speed T.A.C., but dexterously avoided a fall. Unfortunately, Wilson lost his non-stop certificate by his stand falling down. Uckfield and Hartfield were passed without incident, and we particularly noticed an A.C. sociable climbing a long hill on top gear with comparative ease. Soon after leaving Hartfield we came upon W. S. Stagg, who in mistaking a turning and endeavouring to regain the right road had knocked a lamp-post over, and considerably damaged his A.C. The surface of Crockham Hill was in a heavy state, which accounted for one or two failures.

While the competitors proceeded to Hastings the time-keepers, Messrs. F. Straight and A. V. Ebblewhite repaired to Limpsfield to work out the times, and later they and the two judges, Messrs. D. K. Hall and H. G. Cove, and their technical adviser, Mr. Archibald Sharp, inspected Chalk Pit Hill, and eventually decided that the surface both approaching the hill and actually on it was hardly rideable. But in the morning, in the presence of Messrs. Straight and Ebblewhite, W. Douglas, who was watching the trials, made an absolutely clean ascent, even though he was impeded by the car on which the two officials were travelling, and this fact did much to render the exclusion of Chalk Pit by no means a certainty, and many people thought it should have been utilised.

The Second Hill Test.

Returning to Limpsfield the competitors stopped just for sufficient time to allow them to get a cup of tea, provided by *The Motor Cycle*, and were then sent singly on to Titsey Hill. Here a goodly crowd, even greater than that at Westerham, had assembled to watch the competition. Among the spectators was Colonel Holden, who is a vice-president of the A.C.U., and one who is always anxious to do what he can for the motor cycle movement. The majority of those present assembled at the foot, where they were made to "toe

A check in Asbdown Forest on the return journey.

Quarterly Trial.—

F. Philipp (two-stroke Scott) ascending Crockham Hill in good form.

the line" by Mr. Cooper and a policeman. The following competitors climbed the hill in splendid form: H. F. S. Morgan (Morgan Runabout), the two A. J. S. machines, ridden by A. J. and J. Stevens, Luce (8 h.p. Bat), Philipp (on the purring Scott), Armstrong (Premier), Patterson (New Hudson), Hawkins (Premier), Wilberforce (5 h.p. Indian) the star performance—Surridge and B. A. Hill (Rudge-Whitworths), Robbins (Humber), Bailey (Clyde) in spite of being impeded, B. Jones (Premier), Gray (Triumph), Wilson (T.A.C.), Higgs and Portwine (A.C.), Hill, Dixon, Mundy, Forbes, and Atkings (on A.C.'s). Woodhouse (Calthorpe), Oakley (T.A.C.), Gibb (Douglas), Huskinson (Vindec and sidecar), Riddell (Forward), Dixon (New Hudson), Buckman (Buck), Greenhill (Douglas), Burney (Rudge-Whitworth), Jarvis (Triumph), Arter (James), Greaves (Enfield), Brown (Lincoln Elk), Cooper (Bradbury), Ware (Chater-Lea and sidecar), Pollock (James), who had to pass a huge motor delivery van, Davis (on his Double), Johnson (Triumph), Mundy (who was similarly mounted), Newman (Ivy-Precision), Smith (Clyno), and Stevenson (Matchless and sidecar). The following dismounted: Houghton (Bradbury), Islip (Enfield), who had broken a pedal and so could not assist his machine, Spread (Trump-Jap), who was impeded, Watkins (Premier), Fletcher (Douglas), whose gear had slipped into neutral, Cunnington (Premier), Reed (—), Arrow (Premier), Gray (Humber and sidecar), Hodgetts (1½ Moto-Rêve) pedalled, also Griffiths (2¾ M.R.), while Butler (Dot) had to assist his machine. From the top of Titsey Hill the run back to Croydon was practically all on the down grade. At Warlingham the police appeared to be active. Just on entering Croydon, Davis, whose Double had been running magnificently, was pulled up by a broken petrol pipe.

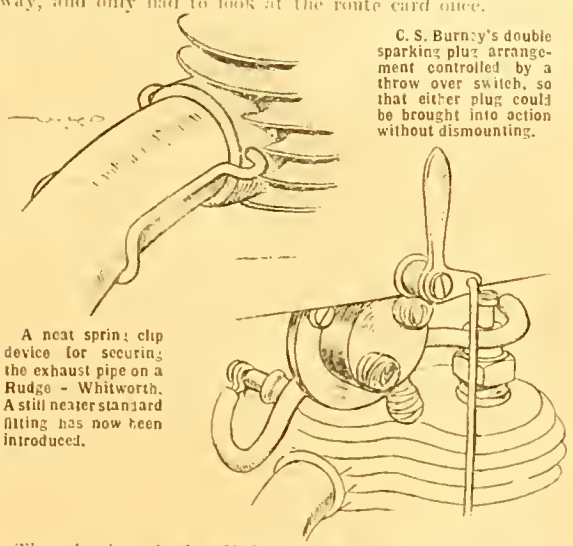
The new course was universally declared to be of a thoroughly sporting nature; it erred, perhaps, on the side of easiness; it was also a trifle intricate, but, thanks to excellent marking by the A.C.U., helped by willing local motor cycling clubs, it was so well indicated that it was almost impossible for competitors to lose their way. Those of the trade who entered were glad, many of those who did not were sorry—of this there is no doubt—while the words of the resolution "the Quarterly Trials serve no useful purpose" are clearly open to contradiction when the results are read. Here we have a trial held in magnificent weather, in which there are 65 starters. Of these only 30 show a clean sheet, 29 had trouble, and six retire; and yet we are asked to believe that these trials are not needed. Thus ended the most successful quarterly the A.C.U. has ever held.

Appreciations of the Organisation.

Undoubtedly the A.C.U. officials excelled themselves in the organisation and marking of the route for Saturday's trial. The two letters which we publish below voice the opinion of the general body:

G. N. Higgs (Clapham Park) writes: "As a competitor in the trial I write to express my great satisfaction and appreciation of the way in which the whole thing was managed and carried out. In my opinion it was impossible for anyone to lose his way on the course (as it was easy to do on former occasions), and everything as far as I personally was concerned went without a hitch. I think those who were responsible for the management are to be congratulated most highly, this trial being such a great improvement on the former contests, when those responsible were so much blamed, and rightly so too."

Victor Wilberforce (West Drayton) writes: "As a competitor in the Quarterly Trials, may I, through the columns of *The Motor Cycle*, express my appreciation of the way the A.C.U. had marked the course with arrows. I had not been over the course before, but I had no difficulty in finding the way, and only had to look at the route card once."

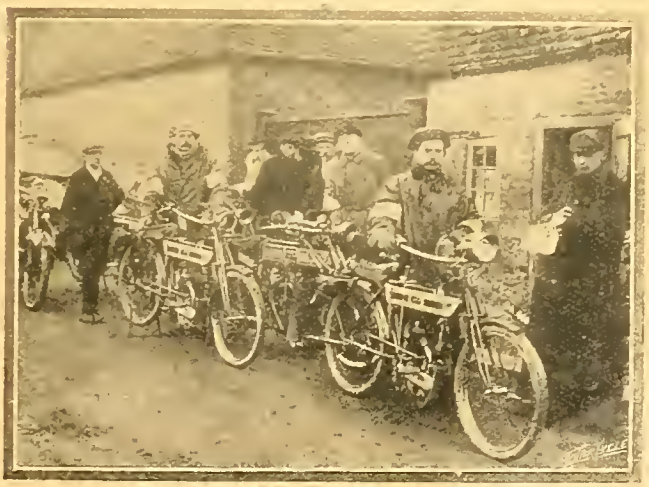


C. S. Burney's double sparking plug arrangement controlled by a throw over switch, so that either plug could be brought into action without dismounting.

A neat spring clip device for securing the exhaust pipe on a Rudge - Whitworth. A still neater standard fitting has now been introduced.

The thanks of the Union are due to the following for kind assistance rendered in connection with the marshalling and marking of the route: The Lewes, Purley and District, Surrey, East Sussex, and Streatham and District M.C.C.'s; Messrs. R. G. Nye, H. B. Jeffery, and A. J. Sproston; also to the owners of the Cadillac and Oryx cars, and the S.C.A.R. car, which took Messrs. H. J. Densham and F. A. Hardy over the course to verify the positions of the arrows.

(*For tabulated list of provisional results see next page.*)



F. A. Hardy marshals the first arrivals before despatching them for Titsey Hill.

TABULATED RESULTS
OF
THE LONDON CENTRE QUARTERLY TRIAL
(SUBJECT TO CONFIRMATION.)

Rider, Machine, and h.p.	Cyls.	Dimensions.	c.c.	Remarks.
†J. Stevens (2½ A.J.S.)	1	70× 76	292	Non-stop. 1st on Westerham (L).
†A. J. Stevens (2½ A.J.S.)	1	70× 76	292	N.S. 3rd on Westerham, t ok wrong turning (L).
F. Philipp (3¾ Scott)	2	70× 63½	486	N.S. 6th on Westerham (H).
	2-stroke			
†H. Greaves (2¾ Enfield)	2	54× 75	343	N.S.
J. W. Woodhouse (3½ Calthorpe)	1	85× 88	499	N.S. 4th on Westerham (H).
*A. C. Robbins (3½ Humber)	1	83× 90	487	N.S. 3rd on Westerham (H).
H. S. Morgan (8 Morgan Runabout)	2	85× 85	964	N.S.
F. A. Hill (3½ Rudge-Whitworth)	1	85× 88	499	N.S.
*V. Armstrong (3½ Premier)	1	85× 88	499	N.S. Traffic stop, Hastings.
A. D. Arter (3½ James)	1	86× 96	557	N.S.
V. J. Surridge (3½ Rudge)	1	85× 88	499	N.S.
C. S. Burney (3½ Rudge)	1	85× 88	499	N.S. 1st on Westerham (H).
B. J. Buckman (4 Buck)	1	90× 95	604	N.S. Traffic stop, Westerham.
*V. Wilberforce (5 Indian)	2	70× 83	639	N.S.
*A. H. Hawkins (3½ Premier)	1	85× 88	499	N.S.
*H. G. Dixon (2½ New Hudson)	1	70× 76	292	N.S. 2nd on Westerham (L).
H. Riddle (2¼ Forward)	2	56× 66	325	N.S. Obstructed by car, Warlingham.
*Rev. E. P. Greenhill (2¾ Douglas)	2	60× 60	340	N.S. Impeded by cart, Warlingham.
*E. C. Jarvis (3½ Triumph)	1	85× 88	499	N.S.
*H. A. Cooper (3½ Bradbury)	1	87× 87	517	N.S.
*C. Bailey (3½ Clyde)	1	85× 85	482	N.S. 2nd on Westerham (H).
H. C. Newman (3½ Ivy-Precision)	1	85× 88	499	N.S.
*R. Mundy (3½ Triumph)	1	85× 88	499	N.S.
H. W. Oakley (7 T.A.C.)	4	60× 60	777	N.S. 5th on Westerham (H).
*E. B. Ware (8 Chater-Lea and sidecar)	2	85× 85	964	N.S. 6th on Westerham (P).
F. Dixon (5-6 A.C. Sociable)	1	90×102	650	N.S. 5th on Westerham (P).
F. Hill (5-6 A.C. Sociable)	1	90×102	650	N.S.
F. Smith (5-6 Clyno and sidecar)	2	76× 82	644	N.S. 1st on Westerham (P).
G. N. Higgs (5-6 A.C. Sociable)	1	90×102	650	N.S. 2nd on Westerham (P).
J. Portwine (5-6 A.C. Mighty Atom)	1	90×102	650	N.S. 4th on Westerham (P).
J. Munday (5-6 A.C. Mighty Atom)	1	90×102	650	N.S. 3rd on Westerham (P).
W. H. Watkins (3½ Premier)	1	85× 88	499	Broke belt Titsey.
B. Jones (3½ Premier)	1	85× 88	499	Dismounted Crockham without stopping engine.
A. J. Luec (8 Bat)	2	85× 85	964	Stopped to get warm !
†W. H. Islip (2¾ Enfield)	2	54× 75	343	Skid and broke pedal, dismounted Titsey.
W. Houghton (3½ Bradbury)	1	87× 87	517	Traffic Uckfield, belt slip Titsey.
T. Pollock (3½ James)	1	86× 96	557	Broke belt fastener.
H. Reed (3½ Dot)	1	85× 88	499	Dismounted on four hills, obstructed on one.
*G. L. Fletcher (2¾ Douglas)	2	60× 60	340	Gear slipped into neutral, Titsey.
*G. Gray (3½ Triumph)	1	85× 88	499	Broke h.b.c. wire.
G. Griffith (2¾ M.R.)	2	50× 85	334	Dismounted Warlingham and Westerham, lost way.
H. Hodgetts (1½ M.R.)	1	85× 60	340	Out of petrol, dismounted Crockham, Titsey police stop
*G. Patterson, jun. (2½ New Hudson)	1	70× 76	292	Float stuck near Westerham.
*A. N. Cunnington (3½ Premier)	1	85× 88	499	Traffic Warlingham, dismounted Westerham and Titsey.
F. W. Arrow (3½ Premier)	1	85× 88	499	Broke belt near Limpsfield.
W. B. Gibb (2¾ Douglas)	2	60× 60	340	Traffic Westerham, sooted plug.
C. Wilson (7 T.A.C.)	4	60× 60	777	Dropped stand.
J. R. Brown (3½ Lincoln-Elk)	1	85× 88	499	Broke h.t. wire through machine falling in hotel yard.
F. W. Applebee (3½ Millennium and sidecar)	1	85× 85	482	Several stops, exhaust valve stretched.
J. Davis (8 Davis Double)	2	85× 85	964	Broke petrol pipe entering Croydon.
F. H. Stevenson (8 Matchless and sidecar)	2	85× 85	964	½ hr. stop, choked petrol pipe near Westerham, ran out of petrol near Hastings.
*A. J. Atkings (5-6 A.C. Sociable)	1	90×102	650	Lubrication 8 mls. from Hastings.
*G. Hughes (3½ P. & M. (passenger on seat on carrier)	–	82× 88	465	Sideslip, dismounted Westerham, Croekham, and Titsey
*A. C. Huskinson (5 Vindec and sidecar)	2	75× 76	627	Impeded Westerham, tyre trouble, choked petrol pipe
*G. T. Gray (3½ Humber and sidecar)	1	83× 90	499	Four hill stops.
*R. R. Spread (3½ Trump-Jap)	1	85× 85	482	Stopped Warlingham, Westerham, and Titsey.
*H. Johnson (3½ Triumph)	1	85× 88	499	Belt broken top of River Hill.
*P. Butler (4 Dot)	1	90× 95	600	Several hill stops, geared too highly.
A. Forbes (5-6 A.C. Sociable)	1	90×102	650	Tyre trouble.
H. J. Pooley (3½ Premier)	1	85× 88	499	Retired.
C. Patteson (2¾ M.R.)	2	50× 85	334	Retired, geared too highly.
A. F. Plint (2½ Plint)	1	71½×78	311	Retired.
*W. O. Oldman (5 Vindec and sidecar)	2	75× 75	662	Retired.
*H. J. M. Hughes (3½ Premier and sidecar)	1	85× 88	499	Retired.
W. S. Stagg (5-6 A.C. Sociable)	1	90×102	650	Retired, collided with lamp-post.

† Lightweight. * Private owner. 1st, 2nd, 3rd, 4th, 5th, and 6th on Westerham denote how nearly each rider placed adhered to the required speed in the (L) lightweight, (H) heavyweight, and (P) passenger classes.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

An Ideal to be Attained.

Would you be kind enough to inform me whether it would materially affect the possibilities of an engine if the foul gas could be completely ejected after the explosion stroke and a cool, pure charge sucked in, instead of the mixture of hot half-burnt gas and petrol vapour, and if this could be done without materially increasing the bulk of metal?—T.E.J.

Naturally it would be ideal to expel the burnt gas completely from the cylinder, but up to the present time no really successful method has been found.

Two-speed Gear and Gear Ratios.

I have a 6 h.p. N.S.U. twin, 24in. wheels. I want a two-speed and free engine. I always use it for passenger work. The weight of passenger and myself with tools is 24 st. Which gear do you think will be the best for touring at week-ends and holiday times? Do you think 4½ to 1 for the level and 7 to 1 for the hills would be all right? I suppose the N.S.U. gear will be the best for my machine?—P.W.

You cannot do better than fit the gear supplied by the makers of your machine, as the fitting of this would entail no structural alterations. The gear ratios you suggest, viz., 4½ and 7 to 1, would suit excellently.

Too Much Speed.

My 4½ h.p. four-cylinder F.N. will not run with all four cylinders firing evenly at less than eighteen miles per hour by speedometer. It has a variable jet, Amac carburetter, and central intake. The valve springs all seem of equal tension, and open at full about ⅛in. Can you tell me how I can make it run slower?—F.L.

We should think it very likely that the plugs you are using are not suitable for the machine. First of all, try setting the points as close together as possible, and if this will not do try a set of plugs the points of which project a little way into the cylinder. If the adjustment and the new set of plugs do not produce the necessary improvement experiment with the carburetter.

Tyres and Stability in Grease.

I have just received delivery of a 1911 model of a well-known make, fitted with non-skid tyres. Notwithstanding the present rainy weather and greasiness of roads, I decided to go for a ride, but only went fourteen miles out owing to the skidding of machine; but for snake twists I never put up such a performance during my seven years of riding. The machine did not lie over, but simply described a nice curve from the centre of the road to the side. This the machine did four times going out and twice returning. I averaged 12-13 m.p.h. only. I do not think it has anything to do with me, but I put it down to the tyres. Will you please tell me what you think the best all-weather non-skid?—W.J.S.B.

There is no "best" all-weather non-skid, for what suits one type of road will not suit another. For instance—on country roads there is nothing to beat the steel-studded tyre, but a steel-studded tyre will not hold on ice, and is likely to give trouble on stone setts and dry wood paving. A rubber-studded tyre holds everywhere except on excessively bad greasy country roads, wood paving and stone setts, and grips particularly well on ordinary greasy roads, on dry wood paving, and stone setts. A rubber and steel-studded combination tyre is a very fair compromise.

THE PROBLEM OF THE LIGRT FOUR-WHEELER.

Light quads and runabouts have been receiving more attention since the decline of the tricar, but it is a fallacy for anyone to suppose that this type of vehicle is new. The spider quad illustrated above is a De Dion owned by Mr Charles Jarrott no less than ten years ago

Power for Sidecar Work.

I should be much obliged if you will answer the following query: Is it possible to run a sidecar with a lightweight of $2\frac{3}{4}$ h.p. and two-speed gear (Douglas, Enfield, or Moto-Rêve)? It is not desired to run over hilly country, but the roads in the district are somewhat undulating. What is the lowest horse-power which would be serviceable in such a case?—LIGHTWEIGHT.

It is possible to use a sidecar with so small a power if the machine is used in a fairly flat district. We should not recommend any power lower than $2\frac{3}{4}$. In ordinary circumstances $3\frac{1}{2}$ h.p. is about the lowest. If a sidecar is fitted to a $2\frac{3}{4}$ h.p. it should be of the lightest possible description, and a heavyweight passenger should not be attempted to be carried.

Peculiar Symptoms.

I have a $3\frac{1}{2}$ h.p. Brown with sidecar on the left side. I have nothing to complain about the running of the machine, but there is a peculiar thing occurs when I turn a corner on the right hand side. The engine stops immediately I turn round. I have carried a fourteen stone passenger up an average hill with ease, and have no trouble whatever when on the flat. The phenomenon only occurs when I turn on the right hand side.—R. CHITSON.

The symptoms are certainly peculiar, and we are inclined to think either that there is a damaged wire on the machine which, when the machine is leant over to the left, short circuits against the adjoining piece of metal, or that the tilting of the machine tends to jam one of the control wires of the carburetter or valve lifter, momentarily stopping the engine.

Conducting Exhaust to the Rear of Machine.

I am anxious to attach a pipe from the exhaust box of my 1911 T.T. Triumph to the back stays in the endeavour to make it silent. (1.) Could I use aluminium piping, and, if not, what is the lightest material you could suggest? (2.) Could you recommend any special firm who would make a neat and good job? Of course, it would be detachable if necessary. (3) Do you consider that this would make the machine absolutely silent? Would there be any back pressure?—V.A.B.

(1.) The most suitable material for an exhaust pipe is iron. We have frequently seen flexible metallic tubing used for the purpose you name, as, owing to its flexibility, the pipe can be directed into the most convenient position. (2.) Any local engineer would carry out the addition for you; no special skill is required. (3.) A long pipe, of not too small diameter, would tend to decrease back pressure and would lessen the noise of the exhaust, especially to the rider, as the noise would be carried away to the rear of the machine, but it would not render the exhaust absolutely silent.

Improving Speed.

I have ground in the exhaust valve of my machine, and it has improved the speed a little. Do you think a stronger spring on the inlet valve would improve speed? The machine does not answer to the throttle; in fact, when I open the throttle wide the machine seems to have less speed. It will not take full air when the spark is fully advanced. It is a Longuemare pattern carburetter. Could you suggest any adjustment that would increase the speed? Why does an engine get hot after running it about a mile? I give it oil about every ten miles. I have cleaned all carbon deposit off the top of the cylinder and piston head, but this does not appear to have improved matters.—N.F.

Certainly try a new inlet valve spring; it seems to be needed. We should advise you to try a slightly larger jet, or, as an alternative, slightly weight the float to raise the petrol level and note result. The engine should be adjusted to take full air when the throttle is almost wide open. As regards the overheating, we can only suppose that the valve cams are worn. Are you sure the exhaust valve is lifting its original amount? This has an important bearing on the temperature of an engine.

"The Automobile Engineer"

published on the FIRST THURSDAY of each month, price sixpence net, is a high class technical journal, devoted to the theory and practice of automobile construction. Special features are criticism of current design, instructive articles on works practice, interesting correspondence on technical subjects, automobile patents, etc. Obtainable from all newsagents & bookstalls. Published from 20, Tudor Street, London, E.C.

Various Queries of Interest.

Does the average adjustable pulley give a lower gear than $6\frac{1}{4}$ to 1? Would a gear, say, of $6\frac{3}{4}$ to 1, be too low for my $2\frac{3}{4}$ h.p. F.N.? What ought this machine to average in miles per gallon of petrol? Do the F.N. people sell a float to suit the specific gravity of petrol sold now, as I have to put weights on mine at random, or else the engine will misfire? I think that has a lot to do with the excessive consumption, but still the carburetter does not flood. Have you ever experienced a sort of swaying motion on a motor bicycle, as if the machine could not keep straight? What causes it, and how can I stop it? If 2in. tyres were put on, would it make the machine less liable to skid, or would they be too narrow? Do you know of any place where I might get a second-hand pair of F.N. or Druid spring forks?—RIS 91.

The average adjustable pulley does not give so low a gear as $6\frac{1}{4}$ to 1. Most vary from 4 to 1 to $5\frac{3}{4}$ to 1. A $6\frac{3}{4}$ to 1 gear would be too low if you weigh under 13 stones. The machine should run about 80 to 100 miles to the gallon. You would not have to weight the float if you move the weight lower down the needle valve. (See instructions in "Motor Cycles and How to Manage Them," on Carburetter Adjustment.) Moving the weight allows the float to be suited to any quality of petrol. Weighting the float of course has the effect of raising the petrol level. We should say that the swaying motion is probably due to the fact that the wheels are out of line. We have experienced a similar trouble, and put it down to wrong design of the steering head. Tyres have also been known to give the effect you describe. Two-inch tyres would be less liable to skid, but would puncture more readily and cause more vibration. We do not know where you can get second-hand spring forks, except by watching closely our miscellaneous advertisement columns.

Change Speed Gear for Passenger Work.

I should be pleased to have your advice on the following: Which would you choose of the two for a sidecar to carry twenty-three stones in weight, a $3\frac{1}{2}$ h.p. single-geared machine or a $3\frac{1}{2}$ h.p. two-speeder (£7 extra)? Do you think I am expecting too much for so small a power? I have seen $3\frac{1}{2}$ h.p.'s with sidecars but not on hills, and I do not want to have hard pedal assistance. If the above is not powerful enough, what in your opinion is the lowest h.p. to do ordinary touring? I have had five motor cycles, so I can keep the engine in fair tune.—B.C.G.

For sidecar work we should emphatically recommend the two-speeder, despite the extra initial cost. $3\frac{1}{2}$ h.p. is none too much over ordinary roads, especially considering your combined weight, which is above the average. Probably careful choice of gears will enable you to maintain a fair average speed.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"G.D." (London). Would be glad of users' opinions of A.S.L. motor bicycles. Do the air springs keep in order? Also opinions of Mabon clutch.

"R.R." (Guildford). Mills petrol economiser.

"J.H.N." (Suffolk). $3\frac{1}{2}$ h.p. Midget Bicar, with and without sidecar.

"S.V.W." (Malta). $2\frac{1}{4}$ h.p. F.N., and $2\frac{3}{4}$ h.p. P. and M. lightweights, particularly as regards cleanliness and reliability.

"H. C. P." (Guildford). The "Handy" sidecar coupler.

"C.F.S." (Bridge of Allan). Lowen sidecar, particularly as regards passenger's comfort and ease of steering.

"J.H.G." (Newbury). Motor cycles for business purposes, particularly the experiences of commercial travellers with sidecar for carrying samples.

"S.K.B." (Altrincham). 8 h.p. 1910 Bat. Ease of starting, flexibility, and consumption.

THE MOTOR CYCLE

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Slide Valve Engines.

THE article published this week on the possibilities of the slide valve engine deals with a subject which will appeal strongly to motor cyclists who are always interested in the latest development in connection with the machines they ride. Although the arguments used in favour of the slide valve engine are of absorbing interest, we should like it to be clearly understood that the writers are necessarily dealing with unsubstantiated theory so far as the motor cycle slide valve engine is concerned, and, in fact, it is quite impossible at the present time to say what difficulties may arise with the slide valve system when it is used on a single-cylinder high-speed motor cycle engine. Indeed, the slight trouble which exists at present with valve springs and poppet valves may be found to be infinitesimal when compared with drawbacks and difficulties we know not of.

However, the interest in the subject is very great, as is proved by the fact that we receive so many designs of piston and slide valve engines. We therefore think our readers will be pleased to read a fair criticism of the two systems, so that they may be prepared for eventualities if the motor cycle slide valve engine should materialise. We further desire to make it quite clear that whatever advantages the slide valve possesses for motor cycles, and even if it were a proved success to-day, it would be a long time before machines fitted with it could be purchased, and motor cyclists, being such practical people, would very naturally wait to see how the new engines performed on the road in competition before being convinced that they were superior to the present-day engine, which is a marvel of efficiency.

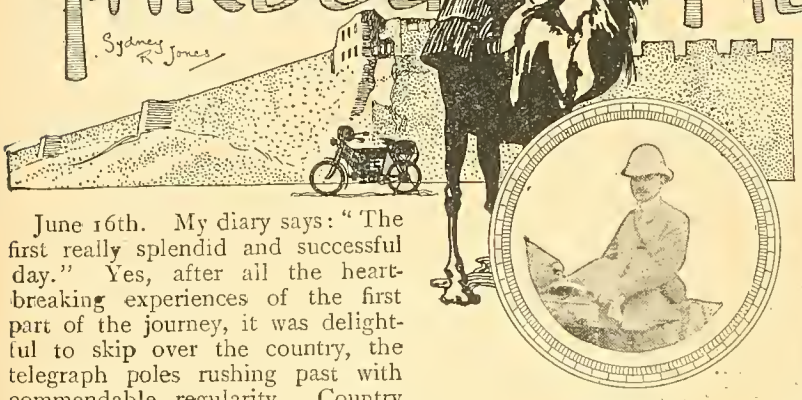
Success of the Winter Trial.

FROM all quarters appreciations have reached us of the manner in which the Auto Cycle Union January Quarterly Trials were conducted. It is strange that the A.C.U. should have surpassed itself in this instance in view of the action of a large section of the trade in refraining from competing, but nevertheless the fact remains. We have already mentioned the extraordinary amount of interest taken in the trial consequent upon a new route having been selected. It is unfortunate that all manufacturers were not of accord in considering the question of supporting the trials this year. It will be remembered that the contention of the trade is that such short distance trials are superfluous and prove nothing, and, in fact, are an unfair reflex of the capabilities of the modern motor cycle. However true such a contention may be in regard to summer competitions, there is no question of doubt that the trials are beneficial and instructive over winter roads. This was our view of the matter in criticising the action of the trade when first the decision was arrived at, and after witnessing the performances of the Quarterly Trials' competitors and analysing the results, we are more than ever convinced that the time is not yet ripe for manufacturers to withdraw from trials. When the results are analysed it is a proof that makers are adopting a too complacent attitude. Only twenty-nine out of sixty-five starters gained first-class certificates for non-stop runs—truly a disappointing proportion. As was expected, the test hills accounted for a number of spoilt records, and there is no question of doubt that the rule compelling competitors to attempt the climbs on the run, that is, with hot engines, rendered the tests a good deal more severe.

THROUGH MONGOLIA

PEKIN TO LAKE BAIKAL BY MOTOR CYCLE

BY PROFESSOR ERIK J. NYSTROM



The writer.

Previous instalments appeared in the issues of January 26th and February 2nd.

June 16th. My diary says: "The first really splendid and successful day." Yes, after all the heart-breaking experiences of the first part of the journey, it was delightful to skip over the country, the telegraph poles rushing past with commendable regularity. Country terribly empty, but ground good for motoring, hard or covered with small stones. I could ride just as well at the side of the road. It should be noted that when I am speaking about "the road" in Mongolia I mean only the track where the camels have gone, no road-making having been done here. In places the ground was covered by fine red and yellow agate stones. I photographed the cycle in a cheerful, idyllic place between black rocks, with a human skull and bones in the foreground. After 100 miles excellent run I stopped some time at my depot, Tao-Tse, No. 3,713, Charava, where I found petrol and everything in excellent condition. Then off again at 4.30 p.m. Country gets greener now, the desert is losing its sway, and bustards, badgers, and antelopes reappear. It was pretty to see the antelopes race with the cycle. Some tried to cross in front, and got so near I could have shot them with a revolver. A splendid run over thirty miles of green plain brought me to the depot De-Li-Go at 8 p.m. The people in N. Mongolia seem to be a slightly different race. The men wear high peaked yellow hats or flat caps of long curly sheeps' fur, the women fix up their hair like an elephant's ears at both sides of the head. These "ears" are kept standing right out by wooden sticks. They dress most gaudily in red and blue silks.

The country got very hilly now, and I had hard work pushing the machine up the worst slopes. For a marvel, too, I saw pine trees, the first since leaving Kalgan. The weather was cold, the wind from Siberia freezing me to the bone, and all the hills were glistening white with snow.

Intense Cold and Rain to Urga.

The next day, June 17th, was still intensely cold, with a driving rain right against me; I tried to put on a good speed, but the rain-drops made the face smart like whip-lashes. The machine lost power considerably on account of the head wind, and although now quite close to Urga, I could not make that place that day. Stiffened by the cold Siberian wind I landed in a Mongol tent in the dark, only ten miles from Urga. The tent was uncommonly dirty, even as Mongol standards go, but the inhabitants kindly as usual. A sheep was killed and cooked in a big iron pot; the old woman picked out a whole handful of meat with her fingers and offered it to me. Although I could not quite recognise what parts of the sheep's anatomy I was having, I made a brave attempt to eat some.

June 18th. The diary says: "Still bad weather; cold head wind." I very soon got within sight of Urga. Square black towers, Chinese fashion, to the west in a long valley below a fine pine-clad ridge. As usual it was almost impossible to "get there." There were morasses, stones, and several knee-deep streams separating me from the city, and I had to get men to carry or cart the motor cycle over. These last three miles took me half a day.

Urga consists of three cities—one temple city full of Lama priests, one Chinese trading mart, and one Russian settlement with a garrison of Cossacks and consulate and bank. I found my depot in the latter building, but learned to my regret that no depots had been established north of Urga. This meant that I must arrange some fast transport to follow me if possible.

Here I met a Swede, Mr. Larson, a great sporting-looking fellow in khaki, with thin aquiline features. He is the best known white man amongst all the Mongols. He kindly invited me to stay with him, and his advice was invaluable for the purpose of fitting out the little transport caravan that was to follow me to the North. With Mr. L. resided temporarily an American traveller, Mr. Cox, and we decided to keep company to Kiachta, he riding with some Mongols on fast horses, which also carried my petrol.

I rested two days in Urga and took numerous photographs in this highly interesting place, where the marvellous mixture of all kinds of yellow and white people provides worthy subjects for the camera.

The head of all Buddhists in Mongolia, the "Huo-Fo," or living Buddha, upon learning of my arrival from Mr. Larson, expressed a desire to see me, and I rode over to his temple below the fine pine-clad mountain south of Urga. The "god" was an intelligent looking man of thirty odd years. He was slightly afraid of the motor cycle, but wanted a car very badly.

Mr. Larson had by now fitted us up splendidly with tent, fur coat, and good horses, and provided us with two men.

Beautiful Country and Glorious Weather.

June 20th. Started at noon towards the North. Very hilly country, occasional terrible slopes, covered with huge stones and water running over them. The Russians made a road here, but as usual it has been allowed to run to seed, the territory being still Chinese, but they do not care, as it is far from anywhere

Through Mongolia.—

The country is rather fine and well watered; lovely green hills with pines, birches, and wild flowers combined to form peaceful, pastoral scenes. The weather, too, was glorious.

June 21st. Good progress made, but I had to lie in waiting for the horsemen nearly two-thirds of the time, the motor cycle, of course, being so much the faster. The American made a picturesque sight, riding a white horse and wearing a bright red sweater; this stood out well against the green slopes. The road did not follow the telegraph line now, and the Mongols' advice was most useful. Country mildly hilly, and larks sang day and night.

lost the pedals, and, having no other brake, the machine ran headlong down over the rocks. Sometimes I was above the handle-bars, sometimes over the luggage carrier, the bumps being such that I expected the whole frame to break asunder. At last the whole toppled over with a deafening crash. The Mongols shouted in their anxiety, and I fully expected that the machine was in a thousand pieces. But the good "Fanny" turned up a trump also this time; it was only the rubber cushion on the spring fork that had split in two places by the terrible shocks.

The engine was as good as ever, and I rode merrily into a Mongol camp. There was a fairish

(1) Clerks at Udde telegraph station in the centre of Mongolia.
(2) At Deli-Go, near Chor telegraph station. The Northern Mongolian women wear a peculiar head dress.
(3) Chinese trading establishment in Urga. A Chinese merchant, two Mongols, and the Swede Larson.
(4) An idyllic place in the desert.

June 22nd. Reached about noon the Chara-Gol, a fairly big river running east-west. The machine was carried over on a ferry boat made of dug-out enormous pine tree trunks. The horses swam across. Soon we got into a large birch forest in a valley that got very swampy; fearful hard work to push and drag. Water was running everywhere, making the ground treacherous. As usual, the machine fell on its side many times, and my poor camera was squashed and broken badly, but I got it glued together by Mongols the same night. We spent two or three hours in that ascent through the swampy birch forest before reaching the slope, then came an awfully steep, rocky descent. I began to coast down this, but

stream to cross, so, putting on full speed, I lifted my feet high, and, surrounded by water spouts, negotiated it successfully. In another little river I was crossing like this, a herd of sheep was walking before me. The last few sheep were not over when I came on like a tornado. I could not stop, of course, in the middle of the stream, so I ran right into the posterior part of an old ram. He got a terrible impetus from behind and was shoved over the stream before he knew what was going on.

To induce good feeling, I rode the motor chasing some Mongol girls round their tents. They enjoyed this hide-and-seek immensely, and I noticed their glistening teeth and saw bright black eyes look slyly out

Through Mongolia.—

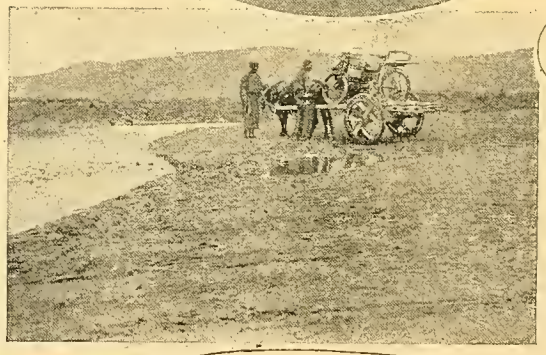
from all corners in the camp, and all was fun and laughter. Good quarters; hospitable, friendly people.

June 23rd. Diary says: "Slow but agreeable progress." Lovely air and temperature. I lie waiting for horses most of the time, as the road is quite intolerable.

June 24th. Country almost bare like middle Mongolia. We cross to-day the large Tro river. Here we find some machinery for the large gold mines further to the east. These mines are worked by Russian capital and Chinese labour, and very successfully, too.

A lovely valley to the north, luxurious wild flowers, red and yellow lilies. I nearly ran into a bog near Ibitsikh; I met here that treacherous morass that Borghese mentions in his diary over the Pekin-Paris journey. This ground looks quite hard and good, but if you step on it the surface under you goes up and down like waves. If your machine penetrates the crust you are in a bad way.

Baskets to keep fuel (camel dung).



(2) The horse market in Urga.
(3) Begging priests selling amulets, in Urga.
(4) The River Charan Gol, North of Urga.
(5) About to cross a stream on an oxcart between Urga and Kiachta.

Russia at Last.

Immediately north of Ibitsikh we enter a stately pine forest, a strange sensation when you come from China and Mongolia. When coming out from this, on the other side of a flat valley, you see white houses, churches with green cupolas and crosses that shine golden in the sun. It is Russia; it is Kiachta!

I had the last good spin in old China and was then absorbed by the manifold formalities necessary to enter "holy Russia." Coming from the free and easy life in the Oriental countries, I felt this particularly disagreeable, although the officials kindly did their best to shorten proceedings. My introduction by letter from Pekin to the local Russo-Chinese Bank was particularly useful.

June 26th. I was off with full kit (very heavy) at 1 p.m. Plenty of difficulties. Lost in pine wood, stuck in morasses and deep sand, etc., almost as bad as in the Gobi. Country is looking rather bad with sparse population of Buryáts, a kind of Russianised Mongol.

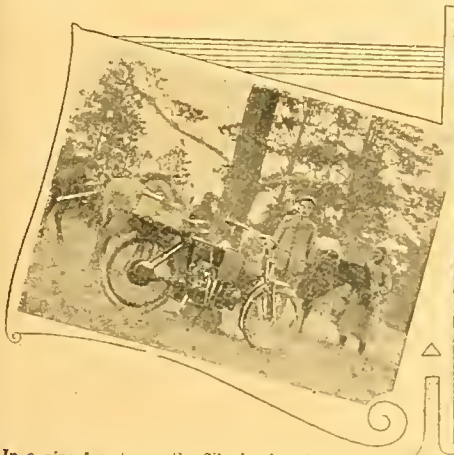
June 27th. Diary says: "Most distressing day with sand patches, slopes, river crossings, greedy, disagreeable Buryáts, and, to crown it all, no petrol to be had in Selenginsh, the next town." I was now alone again, and had no convenient transport with me. I had to telegraph for petrol, and the waste of time was awful. That petrol cost me 14 roubles (28s.) for a tankful.

This part of Siberia seems hopeless, no agriculture, bleak, dry, and windy. Every other Russian you meet is a soldier.

June 28th. I have a rather successful run northwards; in the evening white churches and green roofs appear on the other side of a big river, it is Verknie-Udinsk, and the river is the Selenga. The screeching of locomotives is heard, and I recognised the great Siberian railway. It is hard to "get there." I land finally in a morass and am saved only by the

Through Mongolia.—

assistance of a kind muschik, who nearly lost his boots in the attempt, but gained a welcome reward for his labours. In Verknie-Udinsk I got an awful dinner in a Jew-restaurant (cost 3 roubles). I had perspired much while working through the morass; now it got icily cold in the night; result, bad cold in the stomach, and I got very ill before morning. I first swallowed all the chlorodyne (opium drops) I had brought with me across Gobi; this did not help; then I took the opposite, and drank castor oil in large quantities. I had to be my own doctor, nobody, of course, looking after me. The whole of next day I was feeling shaky, but started in the evening, wanting at all costs to get away from Verknie-Udinsk. This was June 29th.



In a pine forest near the Siberian frontier. Mr. Cox, an American traveller, and two Mongols follow on horseback.

The author, Professor Erik Nystrom, and his four-cylinder F.N.

On Russian territory. Arrival at Lake Baikal. The fishermen's boat in which the F.N. was shipped.

My Last Day.

June 30th. This is the last day. I made a rather satisfactory run to Kubánsk, 65 versts, and then on the old "tract" or Siberian highway—now overgrown and disused, and very bad for cycling—to Pasolsk (40v.). At last I perceived the vast glittering expanse of the Baikal lake, the high mountains barely sighted on the other shore. Our goal was reached. I shipped the faithful "Fanny" into a boat, and our common sufferings were ended. I had taken twenty-eight days (inclusive of a rest of some five or six days) from Pekin to Baikal. The F.N. was in good form, but, unfortunately, time did not permit me to continue, which was a pity, as the great high road from Irkutsk towards the west is exceedingly fine.

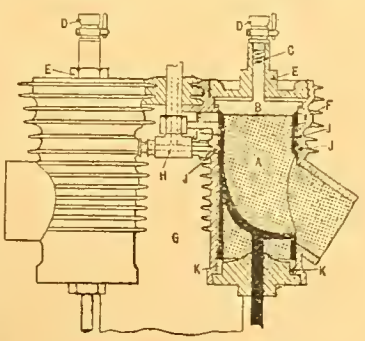
I have only praise for the machine; the accidents to it were entirely the fault of the rider and his insufficient experience. The engine itself, when it did not rain too hard, actually never failed, and upon coming home to Europe again I used the machine without any repair for hundreds of miles just as it was when I reached Baikal. Yes, I travelled some way with a person on the carrier behind, and the much-travelled "Fanny" even stood this test brilliantly. And if it were necessary and desirable to dedicate this article to anybody, I would do it to my brave little companion in joys and sorrows, who carried me so valiantly over prairie and desert, over hills and through rivers—to the willing little "Fanny," and no other.

ERIK NYSTROM.

Hellekis, Sweden.

AN AIR-COOLED PISTON VALVE ENGINE.

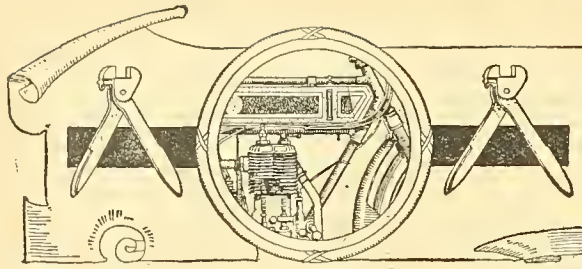
In the description of Messrs. Smith's piston valve engine published last week we pointed out that lubrication of the pistons presented some difficulty. The designers have sent us a sketch of the method which they propose to use which we reproduce herewith. Oil grooves are shown at J; these are formed in the piston valve and its casing, and are fed by the branch oil pipe H. When the valve descends the grooves in the piston rings would be opposite the groove in the valve casing. Lubrication would also be assisted by a spiral groove cut on the face of the valve A from the upper groove to the base of A. Oil wells are provided at K, and any surplus collecting in them would find its way up the spiral groove on the face of the valve.



System of lubricating the valve.

ONE ADVANTAGE OF MEMBERSHIP TO THE A.C.U.

Several members of the Auto Cycle Union have recently availed themselves of the advantages of the Legal Department, and obtained free legal advice and assistance. In one case a member was summoned in the Isle of Wight for driving his motor cycle in a manner dangerous to the public, and also for not producing his licence to a policeman when demanded. The Portsmouth solicitor of the A.C.U. was instructed to defend the member, and he succeeded in getting both summonses dismissed.



Possibilities of the Slide Valve Engine.

BY THE GEMINI.

THE continued complaints of exhaust valve breakages on air-cooled motor cycle engines of orthodox design naturally set one thinking of some method of overcoming the difficulty. All kinds of metals and alloys have been tried for valves, every conceivable shape of cam and various tensions of valve springs, but still the defect is painfully obvious. Nor is this trouble the only shortcoming of the modern motor cycle engine, efficient and reliable as it admittedly is. This criticism is not intended as a plea in favour of engines with pistons and slide valves, it is rather a critical review of the failings of motor cycle engines as we know them, placed side by side with possible developments, and the advantages to be derived from an air-cooled engine of the slide valve type. We shall not, however, omit to point out theoretical deductions and probable complications which may ensue from the use of the latter.

First and foremost, there are five chief claims made by the manufacturers of the slide valve engine which make it such an interesting proposition to motor cyclists, and they are briefly:

(1.) Freedom from valve breakage.

(2.) Greater flexibility as defined by the wider difference between high and low speed with a single gear.

(3.) Rapid opening and closing of the valve ports.

(4.) Remarkable absence of and indifference to carbon deposits.

(5.) External cleanliness owing to the enclosed valves and operating mechanism.

Sleeve and Poppet Valve Engines Compared.

Considering each claim seriatim, and comparing the possible conditions with those we know to exist with poppet valve engines, we find in claim No. 1, "freedom from valve breakage," the *raison d'être* for the stir the Knight slide valve engine made when first introduced, that is, the absence of valves in the accepted or poppet sense of the word. Instead of mushroom or poppet valves—admittedly the main trouble of the modern air-cooled engine—and springs which gradually lose their tension and affect the running, we have two concentric cylindrical sleeves fitting inside the main cylinder. There is no valve box, but ports on each side for the inlet and exhaust respectively are cut in the walls of the cylinder. These ports are opened and closed at the proper moments by corresponding ports in the movable sleeves registering with those of the main cylinder. The claim of greater silence can at once be ruled out of court in considering the question of a motor cycle engine, for the simple reason that what little noise the valve gear of a motor cycle engine makes is drowned by the patter of the exhaust. No. 1 then can be said to be a big score for the slide valve engine in that: (1) The sleeve valves should be the last thing to give way. (2) There are no springs to lose their tension, and consequently no variation in the time or speed of opening and closing of the valves. (3) Burning of the valve and its seat cannot cause any loss of compression.

It is the makers' claim that there is less negative work in operating the sleeves than in overcoming the strength of two valve springs and raising the valve head against extra pressure in the engine. This point, however, is open to argument, and we do not necessarily endorse the view. Poppet valve engine makers maintain that reciprocating the comparatively heavy sleeve valves more than counterbalances the resistance offered by the springs and engine pressure, especially as the recoil effect of the spring returns some percentage from the loss sustained by the resistance of the spring.

Against the sleeve valve may be urged the fact that should trouble, such as a seizure, be experienced, the repair would not be one for the roadside, and would entail considerably more expense than replacing a broken poppet valve, apart from the consideration of extra trouble, delay, and inconvenience.

Flexibility.

(2.) Greater flexibility as defined by the wider difference between high and low speed with a single gear.

This claim remains to be proved in practice, but owes its origin to No. 3. With regard to slow pulling, any advantage that may be gained in this respect is probably quite as much due to slight leakage as to the area of the valve ports or rapid action of the valves. Incidentally, this slight leakage which occurs at slow engine speeds enables a higher compression to be used on a touring engine than would otherwise be possible, with a consequent gain in speed and efficiency.

In this connection it may be mentioned that the first single-cylinder slide valve engine made is not likely to be an improvement upon a first-class poppet valve engine of modern design on the score of flexibility. If it is, it promises well for its future.

(3.) Rapid opening and closing of the valve ports.

It is common knowledge that to get a fast running engine the valves must open sharply, remain wide open as long as possible, and close just as suddenly as they opened. The sleeves of an engine such as the Knight moving in contrary directions give the necessary rapid opening and closing, and it would be almost impossible to obtain the same rapidity of action with poppet valves without the liability of regularly snapping off the mushroom heads. It might be arranged by specially shaped cams and extremely strong valve springs, but, as has been pointed out, the result would be a great likelihood of frequent valve troubles,

Possibilities of the Slide Valve Engine.—

which, after all, is what we are setting out to eliminate. On the other hand, there is no definite proof that the limiting factors of useful engine speed (by the term useful is meant the limit speed at which an engine ceases to give off its maximum power) are either valve area or opening, or rapidity of action of the valves.

Absence of Carbon Deposits.

(4.) Remarkable absence of and indifference to carbon deposits.

The frequent necessity for removing the cylinder of an air-cooled engine of orthodox design is admittedly a great disadvantage. Here again the sleeve valve engine scores, for we have the assurance of engineering users of the Knight that it runs better in its natural state, that is, after becoming dirty with sooty deposits — just at the time, in fact, when an ordinary engine might begin to fall away in power. It can safely be said that the Knight improves in running up to the point of pre-ignition. Apart from that, carbon deposits do not form nearly so readily, as instance the Daimler engine test extending over seven days, and afterwards 2,000 miles on Brooklands, when, after dismantling the engine, the deposits on the piston were not so thick as would form on an air-cooled touring motor cycle engine in 1,000 miles at a wide estimate, although this may not be considered a fair comparison in view of the divergent conditions. Why this is the case can be explained to some extent. The Knight construction of separately detachable combustion head enables the inside to be machined smooth all over, as well as the piston head. This prevents carbon forming quickly. Further, the combustion space is spherical in shape, and the absence of pockets or valve spaces conduces to high efficiency. In passing, it may be added that the combustion head of the Knight engine is more readily detachable than the complete cylinder of an ordinary engine, although it must be admitted that motor cyclists generally have not hitherto taken kindly to two-piece cylinders owing to the difficulty of making the joints gas and oil tight after once or twice disturbing the packing.

(5.) External cleanliness owing to the enclosed valves and operating mechanism.

On the score of cleanliness, there is a big margin in favour of the enclosed valve system. The lack of cleanliness of the modern motor cycle engine is painfully obvious. Examine an engine but a month old and the valve springs and tappets will be found to be besmeared with a mixture of oil and dirt, particles of which are being gradually worked into the crank case. Most of the oil has worked its way out of the tappet guides and the flying dust and road grit adhere to it with bulldog tenacity. A sleeve or piston valve engine could be made to keep cleaner than any engine with external moving parts. Almost as clean a job could be obtained by completely encasing the valves and tappets, but this might tend further to increase valve troubles, by screening the valves from natural cooling draughts.

DIAGRAMS SHOWING THE PORT OPENINGS OF THE KNIGHT SLIDE VALVE ENGINE.
The solid black portions represent the port openings in the sleeves.

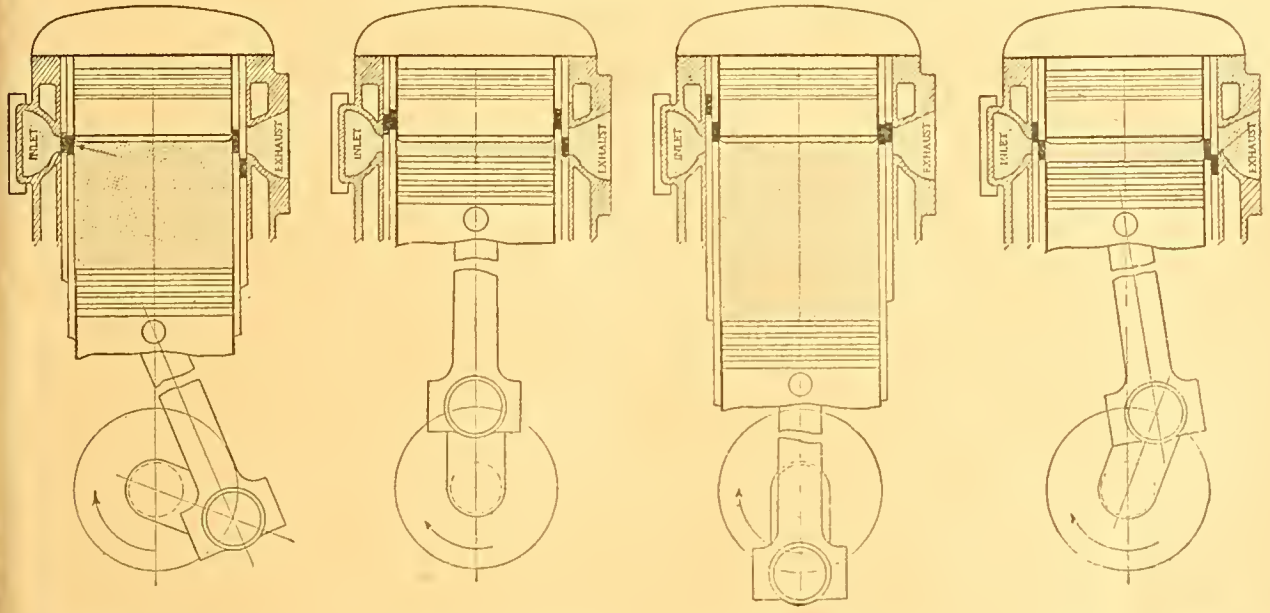


Fig. 1—INDUCTION. The suction stroke almost completed. The inlet ports are wide open at this point. The outer sleeve is travelling downwards and the inner one upwards.

Fig. 2—COMPRESSION. The piston at the top of the stroke. Both the inlet and exhaust ports in the inner sleeve are over the broad ring in the cylinder head, effectually making a compression tight chamber.

Fig. 3—FIRING. The piston is now at the bottom of the firing stroke, at which point the exhaust port opening is 5 mm. deep. Both sleeves are travelling downwards.

Fig. 4—EXHAUST. The piston is now just over the top dead centre of exhaust stroke. The closing of the exhaust port is accomplished by the outer sleeve travelling downwards until the upper edge of the port closes over the lower edge of the exhaust chamber in the cylinder casting.

Efficiency.

We have refrained from reference to the respective efficiencies of the two types of engine we are considering, as no fairly comparative performances are available. No air-cooled motor cycle slide valve engine has actually run so far as we are aware, but in the car world the poppet valve engine remains at the head of affairs

Possibilities of the Slide Valve Engine.—

for speed on the flat and hill-climbing, as well as horse-power brake tests for a given cylinder capacity.

Now we arrive at more elementary considerations. Firstly, will an air-cooled slide valve engine be a success without artificial aids to cooling? Some eminent designers say "Yes," others just as emphatically say "No." At any rate, a water-cooled head, we are convinced, would suffice even if the wholly air-cooled cylinder were found to be wanting.

Secondly, how is the engine to be started? This difficulty will be got over by the provision of a special form of compression release.

Thirdly, will the sleeves gum up so tightly after cooling down that a re-start will be a tedious process? This should not be the case, provided lubricating oil of a suitable consistency is used.

Possible Difficulties.

Other possible difficulties may be in connection with the balance of a single-cylinder high-speed engine, simply because the sleeves are unbalanced. Poppet valves are of light weight and consequently almost a negligible quantity when considering the question of balance, but sleeve valves are a great deal heavier, so that the matter becomes a more difficult proposition.

The design of the frame into which the engine may be fitted must also receive special consideration. The Knight construction is higher than an ordinary engine, and even at present only just sufficient space is left to enable the removal of the cylinder, leaving the crank case *in situ*. One way of overcoming this difficulty would be to provide more readily detachable engine fixings, or to swing the engine sideways out of the frame. Otherwise an entirely new design of frame would be needed for an engine of equal bore and stroke ratio. A short stroke might be utilised, but it is found in motor cycle practice that the shorter the stroke the hotter the engine becomes, so that a short stroke and low gear might swing the pendulum to overheating.

In conclusion, it must be borne in mind that the above considerations so far as sleeve valves go are mainly theoretical deductions not yet substantiated in practice. We have no actual figures to go upon, as no manufacturer has yet had the enterprise, or perhaps we should say the opportunity, to make a slide valve engine for testing purposes, but it cannot be denied that it has so many points to recommend it that it behoves up-to-date designers to investigate its claims from the special point of view of motor cycle work, to keep abreast of the times. We have not personally relinquished the subject of sleeve or piston valve engines since the Knight was first introduced into this country, nor shall we do so until the common difficulties incidental to modern engines as above outlined are overcome.

A NEW SLIDE VALVE ENGINE.

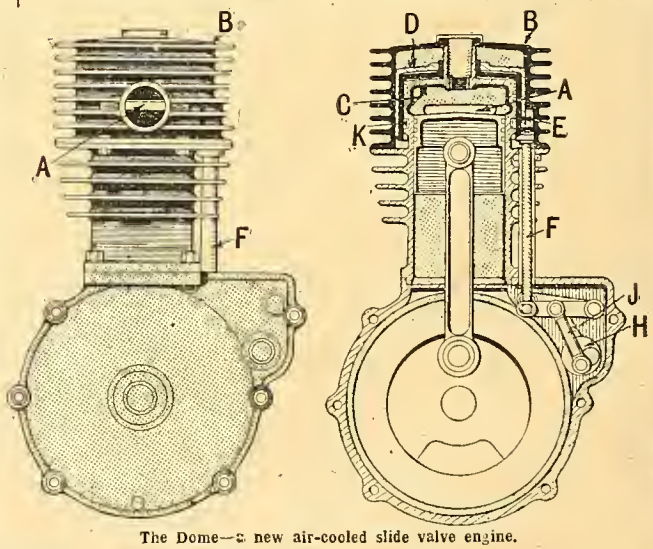
WE have received a drawing and description of an air-cooled engine for motor cycles which have been sent by the Dome Valve Engine Co.

The sectional illustrations will show that the gas inlet and exhaust ports A are disposed laterally in a domed cover B, which, bolted to a circular flange on the upper end of the cylinder, encases the outside surface of the cylinder head C and the interposed dome valves D and E, acting as a "helmet." The valves of the engine, therefore, reciprocate within the annular space between the outer surface of the cylinder head and the inner surface of their cover. The cylinder head is also provided with similar horizontal ports for inlet and exhaust, above and below these ports being a series of metal packing rings over which the inner dome valve E slides for a short distance, the outer cut-off dome valve D sliding over it in turn. The valves are positively driven through a pair of side rods F by a small crankshaft H, and short connecting rods J, making one-half the revolutions of the main shaft. This small crankshaft is turned by the main shaft by spur gearing.

The dome valve tops are pierced with orifices, and a small quantity of oil is maintained at a constant level in the annular spaces K above and below the cylinder ports. It is, therefore, claimed that at every down stroke of the valve a correctly proportioned quantity of lubricant is automatically distributed all over the working surfaces.

The inner dome valve slides downwards for its ports to pass over the widest of the packing rings, making a gas and oiltight joint for compression and explosion, ascending for exhaust and admission in co-operation with the outer dome valve. It is claimed that both the valves are in mechanical balance, and it should be further noted that the gas pressure is held by the inner dome valve solely, no strain being borne by the valve cover.

The engine has been designed for air-cooling and water-cooling, and in the latter form it should run satisfactorily. When air-cooled we imagine the combustion head not being in direct contact with the radiator fins would cause the metal of the head to get unduly hot.



The Dome—a new air-cooled slide valve engine.

A. Inlet and exhaust port orifices.
B. Domed cover
C. Combustion head.
D. Outer dome slide valve.
E. Inner dome slide valve.
F. Side rods.
H. Crankshaft driving side rods.
J. Connecting rods.
K. Annular spaces for lubricating oil.

LEADING MOTOR CYCLE CLUBS

E. J. Prosser, captain. E. S. Hare, third captain.

No. 4.—THE BRISTOL BICYCLE AND MOTOR CLUB.

THE above club, formed in 1876 with the title of the Bristol Bicycle Club, is one of the oldest in the United Kingdom. The advent of the three-wheeler caused an alteration in its name to the Bristol Bicycle and Tricycle Club until the year 1904, when the formation of a motor section led to the club's adoption of its present title.

The first captain of the motor section was Mr. Eli Clark, who as a rider of the G.O.O. (grand old ordinary) gained considerable distinction. In 1904 ten members competed in a hill climbing competition, two members gained awards in the Auto Cycle Club's 1,000 Miles Trial, and one also gained a prize in an Open Hill Climb.

In 1905 the club became affiliated to the Auto Cycle Club and Motor Union, and was under the captaincy of Mr. R. Stock. In this year two trials were run in which eleven members (including three on passenger machines) out of a total of twelve made non-stops—a performance probably not equalled by any other club. Mr. Clark also won the first gold medal in the Passenger Class Trial promoted by the Auto Cycle Club.

Philip Grout, the present hon. sec.

In 1906 Mr. E. S. Hare succeeded to the captaincy of the motor section, and in open events, viz., Land's End to John-o'-Groat's Trial and Auto Cycle Club Birdlip Hill Climb, three and four members respectively competed. No club competitions were held this year, but several week-end runs, social gatherings, etc., made up for the omission. One member, however, cycled round England on a push bicycle in seven days.

In 1907 Mr. E. J. Prosser combined the dual offices of captain and secretary, the former office being held by him up till the present time. One penalty run was held this year. The following year saw the club affiliated to the new scheme of the Auto Cycle Union, and there was no falling off in the enthusiasm of members, of whom one rode in the End-to-end Trial and another in the Plymouth Trial.

In 1909 a penalty run with eleven starters and a trial with thirteen starters were held.

The year 1910 opened up well, a large increase in membership having to be recorded. The club events included four trials and a speed-judging competition, together with a Twenty-four Hours Trial, Bristol to Land's End and back. A team was entered in the M.C.C. Trial at Daventry and made non-stops, and there is little doubt that the club would have tied for first place but for the most unfortunate mistake of Mr. Eli Clark, who omitted to set his watch, and so was penalised in the first circuit.

A large number of members rode in the A.C.U. Six Days Trial, M.C.C. London-Edinburgh, Scottish Six Days, London-Land's End, and Irish End-to-end Trials.

Mr. Eli Clark succeeded in reducing the lightweight End to-end record by 17 hrs. 40 mins., whilst E. Kickham won the lightweight classes in the Sutton Bank and Bradford Hill Climbs.

1911 promises to be a record year, as the membership is still increasing, and an Open Hill Climb, Twenty-four Hours Trial, and four other penalty runs, etc., will be held.

Mr. Philip Grout, of Warmley, Bristol, has taken over the secretarial part of Mr. Prosser's dual office, and he will be pleased to hear from those interested.

The club's headquarters for about thirty years have been at the Full Moon, North Street, Bristol, where the club has a private room, billiard room, garage, etc.

The subscription is 10s. per annum, plus 2s. 6d. entry fee, together with the A.C.U. affiliation fee. A *Club Gazette* is issued to members.

Eli Clark, first captain of motor section.

ANNUAL GENERAL MEETING OF THE B.M.C.R.C.

THE A.G.M. of the British Motor Cycle Racing Club was held at the offices of the B.A.R.C., Carlton House, Regent Street, S.W., on the evening of the 31st ult. Colonel Holden, the president, was in the chair.

After the minutes of the last general meeting were duly passed and signed, the Chairman referred to the annual report and balance-sheet of 1910, and also to the sad loss the club had sustained in the death of its patron. He also referred to the increase of membership, and mentioned that the fact of the small number of members present that evening showed that the position of the club was a very satisfactory one, since if it were not, plenty of people would attend to complain. (Laughter.)

The report and balance-sheet were passed, and the committee for 1911 elected: Messrs. A. V. Ebblewhite, W. H. Wells, F. A. McNab, H. H. Collier, and G. Forster. Mr. T. W. Loughborough was re-elected hon. sec.; Mr. A. G. Reynolds, hon. treas.; and Mr. A. Ross, hon. auditor.

The announcement was made that Mr. F. A. Hardy had expressed his willingness to act as honorary press secretary.

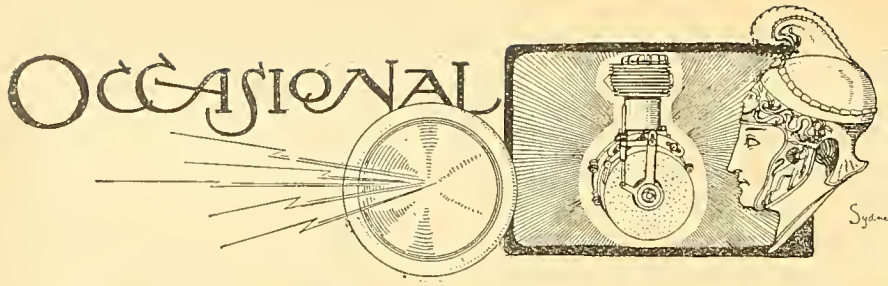
A Successful Racing Season.

Major Lindsay Lloyd then proposed a vote of thanks to Colonel Holden, mentioning that the B.M.C.R.C. had had a brilliant past, and he hoped that it would have an equally brilliant future. He referred to the large number of records and to the increasing speeds of motor cycles. The club, he was confident, had led to the improvement of motor bicycles by means of track racing, even as motor bicycles had been improved by other institutions holding trials on the road. The club had certainly given pleasure to the riders, brought benefit to the manufacturers, and amusement to the spectators who witnessed the races. He referred to Col. Holden's long association with the motor cycle movement.

An Early Motor Bicycle.

Colonel Holden, in reply, said that his interests in motor cycle affairs were no less in 1911 than they had been in 1894. It might interest those present to hear that one of his early motor bicycles had been placed in the South Kensington Museum at the request of the authorities, and it will be shown in part section. He thought a vote of thanks ought to be passed to the honorary secretary for the excellent work he had done.

Mr. W. H. Wells said that Major Lloyd had unfortunately omitted to mention the fact that the B.M.C.R.C. had given manufacturers the only opportunity of testing the machines they intended to enter for the Tourist Trophy Race by means of long distance competitions on the track.



Cost of Running a Motor Cycle.

Long experience has convinced me that the cost of *running a good* motor bicycle is mainly within the rider's control; the expense of a bad machine is problematical, and is often swollen by railway charges, by repairs badly done and demanding periodical repetition, etc.; but then bad machines are few and far between nowadays.

It must always be understood that the cost of *running* a motor bicycle and the cost of *motor cycling* should be treated separately. The heaviest expense in which motor cycling has landed me has always been the increased amount expended annually at hotels. Since I took to the pastime, I have spent a month in hotels for each day that I spent formerly, and a sovereign instead of the nimble threepenny bit. This item can only be limited by a sternly restricted programme and a food wallet.

The next heaviest item has been depreciation. This has hit me fairly hard at different times. The genuine amateur who purchases a new machine each year probably drops £15 per annum on depreciation, inclusive of his accessories. This sum is reduced by running a machine to destruction, in which event depreciation charges need not occur once in five years.

The third heavy tax is avoided by the clever rider, for it consists of the fees charged by repairers for overhauls, adjustments, mending punctures, grinding valves, etc., which operations are performed at home by the modern experienced owner. The lazy or shiftless rider may easily expend £5 a year on this item alone.

Again, the inexperienced rider pays far more than he need for such details as belts, tyres, sparking plugs, chains, and so on, which repay careful treatment by a prolonged life.

Petrol, oil, taxes, and a few minor replacements are the sole inevitable expenditure, and they tot up to a very insignificant sum, comparable only to the drinks and smokes budget of an economical bachelor. I should sum up my experience by saying that any enthusiast can *run a good* motor bicycle on an outlay of between £5 and £10 a year, according to mileage, if

(*a*) He avoids hotels as far as possible.

(*b*) He learns to do his own repairs and adjustments.

(*c*) He is content to keep a machine for several years.

(*d*) He takes care of his tyres, belts, etc.

The rider who can afford to spend a larger sum may be correspondingly extravagant on any or all of the above heads, and I have no doubt some of the keenest men spend anything from £50-£100 per annum on the finest hobby in the world.

A24

Some Tiresome Nuts.

To save owners trouble I would instance some nuts which usually require attention.

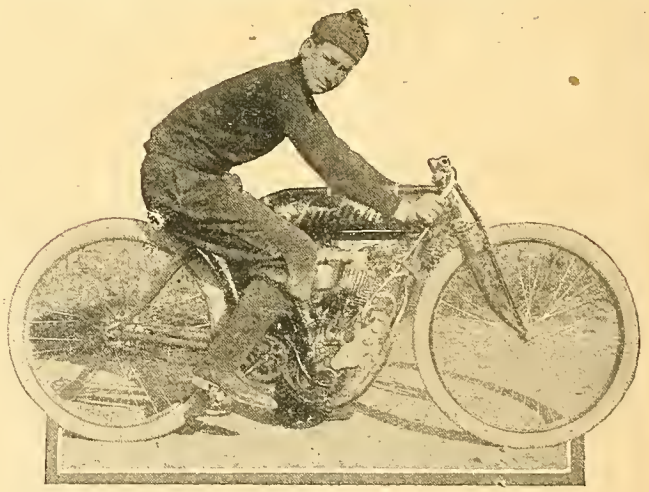
On various machines I have owned, certain nuts have given me colossal trouble, and I have almost despaired of adequately safeguarding them against vibration. The first set are those employed to clip certain types of rear-wheel stand to the back forks. Vibration seems to pile up at this point, and on one or two machines I have lost at least a dozen nuts in a year. I have tried burring over the heads of the pins; I have tried painting nut, bolt, and thread with the ropiest old paint I could get, but without avail.

Nowadays, when I find myself afflicted with such a stand, I put a spring washer under each nut, screw the old thing up dead tight with a huge spanner and a two-foot screwdriver, and finally burr the end of the bolt over with a big punch and hammer; after which the nuts generally last a year.

The other nuts which figure as one of my pet abominations are those used on certain chain-driven machines, especially of the passenger type, for securing the rear sprocket to the flange.

I do not criticise the design, which affords a simple method of raising or lowering the gear ratios by bolting on a sprocket of different dimensions, but I do assert that these sprockets have a most disconcerting habit of working loose.

The procedure described above should be applied in this instance also; otherwise after a time several bolts will be missing, and either the remainder will shear, or the sprocket will slip out of line, and things will begin to happen among the chains.



Chas W. Balke, who at California on the last day of the old year covered two miles in 1 min. 24⅘ secs., ten miles in 7 min. 4⅘ secs., and twenty miles in 14 min. 11⅘ secs. These and intermediate distances are claimed as world's records. He rode the twin-cylinder Indian shown.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Easy Starting Devices.

[5340.]—Do any of your readers know of this simple device for easy starting? Place a steel ball in the cup of the compression tap, and fit a cover over the top so as to prevent the ball being blown away, but loose enough to admit air. On opening the compression tap and pushing the machine in the usual way it will start quite easily. The tap must, of course, be shut when the rider is in the saddle. I may add that I have adopted this on my 3½ h.p. Minerva with complete success. G.H.H.

Water Freezing in Acetylene Generators.

[5341.—I have noticed that several of your readers have suffered from frozen generators this winter, and the only antidote mentioned is to wrap the generator in a covering of some sort. Up here we have some pretty severe frosts and my own generator has been completely frozen up—until I used glycerine. Before filling up the generator with water I add ten per cent. of glycerine and thoroughly mix. This has entirely prevented the freezing up, and the glycerine has had no bad effect whatever on the generation of the gas.
Co. Durham. G. STEPHENSON, F.C.S.

The Use for a Differential Gear.

[5342.]—In the issue of January 26th I noticed that your correspondent "Precentaur" in his article on "Passenger Motor Cycles" proposed to dispense with a differential gear on the ground that this was the practice on racing cars. He has apparently failed to realise the reason of this in the case of racing cars. The reason, I may say, is this: When the driver of a racing machine wishes to turn a corner, he approaches it at a tremendous speed, and locks his front wheels round completely, thus causing the driving wheels to swing out, and they in their turn fall in with the new changed direction of travel. I presume "Precentaur" does not intend to subject his light three-wheeler to such drastic treatment, and consequently he will find a differential gear indispensable to a machine such as he intends to build.
F.C.T.

An Appreciation.

[5343.]—Recently I decided to ride from London to Liverpool on a twin Premier motor cycle with sidecar. The engine was not working in its usual trusty and regular manner, and on reaching Atherstone I put it in the hands of a mechanic and stayed there overnight. In the morning, as the fault could not be located, I returned to Coventry and placed the machine in the hands of the makers, at the same time (in my ignorance) giving them a little of my mind as regards the machine, for which I was afterwards extremely sorry, as it turned out the fault lay entirely on my side. The holes in the silencer were found to be completely blocked up, and they had to be redrilled, and in addition other matters relative to the care of the motor were seen to. During my visit I saw over the works, and must say that for thoroughness of workmanship and all that makes for soundness and perfection of finish, it surely rests with the Premier Cycle Co. My machine was put in A1 condition at a nominal cost, and when I received it it was all that could be desired. This is only a small tribute to the satisfaction received in dealing with this company, and is sent entirely of my own accord. R. STEEL.

Puncture-sealing Compounds. An Experience with Various Accessories.

[5344.]—Referring to the notes of Mr. T. D. Murray [5322] in a recent issue, we are, of course, pleased to learn that Firmax gives this gentleman so much satisfaction, but with regard to butt-ended tubes we stipulate in our booklet on page 16 that "Firmax cannot be used for butted tubes, because there can be no free circulation."

We may point out, however, that we thoroughly recommend Firmax for such tubes as the Rich detachable or any similar makes which would give free circulation.
FIRMAX, LIMITED.

Cleaning the Motor Cycle.

[5345.]—"Ixion's" tip in your issue of January 26th *re* coating hubs, spoke heads, and other plated parts with vaseline or Rangoon jelly is thoroughly sound and a great time saver. I have carried out the plan on cycles and motor cycles for the past fifteen years. I remember one cycle of mine ran nearly 12,000 miles in all weathers in four years, and the protective coating was not touched throughout. On selling the machine the grease was rubbed off and the plating appeared as good as new.

As "Ixion" says, "the coating is not at all unsightly." In a few hundred miles a fine dust has covered all the grease and the bright parts have all disappeared under a not unpleasant brown coat, which resists wet and mud. One certainly need never worry about rust.
J. W. G. BROOKER.

Motor Cycle Taxation.

[5346.]—According to a paragraph in *The Autocar* of the 28th ult. and *The Motor Cycle* of last week, I gather that it is proposed that the R.A.C. should approach the Chancellor of the Exchequer on the question of the taxation on motor vehicles with a view to getting certain abatements made, chief of which proposals from your readers' point of view is that the taxation on motor cycles of 2 h.p. and less should be reduced to an annual payment of 10s.

There is also a suggestion that the horse-power rating of cars is grossly unjust (as undoubtedly it is) in the case of cars of very early type, and that their antiquated type and power should be taken into account with a corresponding reduction in taxation.

It is a great pity that advantage cannot be taken of the opportunity now presented of drawing attention to the fact that the present tax of £1 comes exceedingly hard to the very many hundreds of your readers whose means will only allow of their acquiring ancient mounts, which, while perhaps giving satisfaction to their respective owners, cause them to pay an annual tax of 10% of their market value, as against the 2% paid by the fortunate man who can afford to have, and does have, the best.

This complaint has already been voiced by several of your correspondents, but as the question of taxation is to be drawn to the attention of the Chancellor, I venture to trouble you with this further letter in the hope that the opportunity may not be lost sight of.

Ancient mounts might very well be included in the proposed "10s." class, or the original 15s tax reverted to, which is surely ample coupled with the petrol tax.
THOMAS A. VALE.

Winter Riding in England and Canada.

[5347.]—Being a devoted reader of your widely read magazine, and an enthusiastic motor cyclist, I noticed in looking over the issue of January 5th, an account of the recent trip from London to Exeter and back. What with the rain, greasy roads, etc., it must have been quite an endurance test for the riders, also the machines. But one thing I noticed very strongly was the way the riders were dressed up for that trip. One would think that they were riding to the North Pole and back. I have visited England on two occasions in the last seven or eight years during the winter months, and always noted how mild the climate was compared with that in Canada. There are still a few motor cyclists indulging in Toronto, but the majority have put their machines away for the winter months. The mercury has been hovering around zero for about eight weeks now, sometimes dropping a few points below, but they still keep on. Not one of these enthusiasts is wrapped up like your illustrations show of the trip referred to. In Toronto the snow gets packed by continuous traffic and freezes like a cake of ice, so that riding is kept up quite regularly. R.M.C.

Toronto, Canada.

[Our correspondent forgets that the damp cold of England is more penetrating than the dry cold of Canada. In addition, one has to be prepared for rapid changes in weather in this climate.—ED.]

Passenger Machines.

[5348.]—I should like to make a few comments on "Precentaur's" suggestions for a passenger tricycle. I quite agree with him that there is a market waiting for a good motor tricycle; in fact, I am part of the market, but he says that a differential is not essential, as it has been proved that racing cars can do without it. It seems to me that this proves nothing except that racing cars can do without it. It does not even prove that racing tricycles can do without, but a touring tricycle most certainly cannot do without, a differential or compensating gear of some sort, and moreover it must be a very good and easy working one. A tricycle will not take a corner as fast as a bicycle, even when fitted with a differential, and to dispense with it or rely on a makeshift would be asking for serious trouble.

Suppose, for instance, you want to turn the machine round in the road so as to reverse its direction. The inside wheel will revolve once while the outside wheel revolves over two and a half times. No belt can be expected both to drive the machine and slip enough to compensate for that.

I gather that "Precentaur" would be able to carry out this manœuvre by letting the belts down on to the free ring of the pulleys and getting off and pushing the machine round, but it could not be done by power or pedalling. This by itself is not a very serious thing, but there is something between turning round with full lock on and going straight, and one could hardly be expected to put the engine out of gear at every corner or bend. There is a very heavy side strain on the front wheel of a tricycle, even though fitted with a differential when taking a curve.

If "Precentaur" wishes to prove this let him get an old type tricycle with the weight well behind, and try even a moderate curve at 20 m.p.h. with the differential locked, and see what happens.

To get round a bend on "Precentaur's" machine either the belts or the tyres must slip. Tyre slip is not a thing to be sought after, as apart from wear, when a tyre does slip, it prefers to do it sideways, especially round corners. Belt slip is an unknown quantity and depends on the tightness of the belt and the weather, and a few other things, so that an extra tight belt, a greasy road, a slight curve banked on the wrong side, and a speed of 20 m.p.h. would most certainly mean a ghastly spill.

As to the rest of the construction, "Precentaur" suggests that it should have an upper frame similar to a motor cycle. This means that there would have to be a door on both sides of the body which would add to the expense of construction and detract from the strength. The engine, too, in my opinion, should be perfectly open on the top, and should lift free with magneto and carburetter complete by removing two or three bolts and nuts. I don't see how "Precentaur" is going to keep his engine cool without cooling his passenger's legs to the same extent.

The Roc tricycle is remarkably sound on this point. To my mind the three-wheeler that is going to get the market and my order with it must be an absolutely all-weather machine, and that at once knocks the belt drive out of the specification. It must either be chain-driven, or, better still, shaft-driven.

If "Precentaur's two belts are not the same tension he will be trying to drive the two ends of his solid back axle at different speeds, and so have a perpetual belt slip.

RALPH WICKSTEED.

The January Quarterly Trials.

[5349.]—I should very much like to express appreciation, through the medium of your valuable and instructive paper, of the excellent manner in which the details of the Quarterly Trials held on the 28th ult. were arranged by the A.C.U. and assisting clubs.

I entered my new unfinished A.C. Sociable in what was my very first competition by the courtesy of the manufacturers, Messrs. Auto Carriers, Ltd. I had only driven such a machine two miles previously to the trials

I was greatly impressed by it all, and though the country through which we passed was quite strange to me, I was never in doubt as to the way owing to the efficient marking by the A.C.U. arrows and the kindness of officials and spectators at the various bad turnings. A. J. ATKINGS.

[5350.]—The performances of many of the motor cycles on Titsey Hill demonstrated very clearly the necessity for some form of slipping clutch or change-speed gear. The manner in which some riders of single-geared and fixed engined mounts took the corner on the steep part of the hill must have disappointed the non-motor cycling public who happened to be there.

Most of the riders evidently guessed, and, I think, guessed rightly, that if they did not take that corner in a manner which approached driving to the common and their own danger they would not get up the hill at all. If a motor cycle cannot climb a hill like Titsey Hill without reckless driving it cannot be described as an efficient touring machine. Of course, there were some exceptions, several machines taking the hill in a manner which would be likely to convert the non-motor cycling public to the pleasure of motor cycling. The cause of the trouble is obvious, *i.e.*, the gradient on the corner of the steep part of Titsey Hill was such that most of the engines were incapable of taking the corner at a slow or even medium engine speed with a single gear. The old complaint of extra complication has died out in a great measure, and I think the principal reason why a clutch with or without a change-speed gear is not standard is the extra expense entailed. I think that the T.T. type should not be encouraged to enter for reliability trials on public roads.

There was one thing more I noticed which is open to criticism, and that was the spectacle of riders in heavy clothing pedalling or running alongside their machines until they were exhausted. SLIPPING CLUTCH.

[5351.]—I note with great pleasure that the January Quarterly Trials are recorded as a great success, and that they aroused a greater amount of interest among the general public than hitherto, even though they were to some extent boycotted by the trade.

I should like to take this opportunity of reminding your readers that the proposal that the trials should in future be held in four different parts of the country emanated in the first place from the Midland Centre of the A.C.U., and though at first coldly received by the governing body, was eventually got through at a council meeting held in Nottingham last autumn.

It must be particularly gratifying to members of the Midland Centre that the trial was such a success, and it is to be hoped that the future trials will be as great if not greater successes. FOUR QUARTERS.

A Wonderful Engine.

[5352.]—I am a constant reader of *The Motor Cycle*, and take a great interest in anything new in engines, especially for motor cycles. My idea is a one-valve (overhead) four-cycle engine, air-cooled ordinary cylinder, and piston. The carburetter I would use is positive feed, and so small that I could put it in my cheek and talk to any-

body. The cam for working the valve does not need to be abrupt like other cams, as the valve does not need so big a lift or as quick a movement.

This idea is the nearest to the two-stroke I ever saw: the only addition is the one-valve. It would be quite easy to adopt a slide valve instead of the ordinary valve in the cylinder head, as the motion is quite smooth. I have had this engine running full speed with practically no noise. I got the idea from an old American inventor, who had the engine made and ran it in his shop. He asked me to try and develop it if I could, as he was too old and had not the money. I am a thorough mechanic myself, and when I saw it I thought it was the finest and simplest thing I had seen.

If any firm would take an interest in such an engine I would be very glad to communicate with them. It would really be worth their trouble if it is a new thing. I might say the fuel is not injected into the cylinder, and the carburetter is a marvel in itself.

I have not gone into details or given a sketch of the engine, as I have no protection as yet, and do not know the patent laws of this country.

FREDERICK M. WILSON.

Cost of Running a Motor Cycle.

[5353.]—Observing that the majority of your correspondents under the above heading own single-cylinder machines, I thought it would interest the others to observe the cost of running a 1910 5·6 h.p. Bat, bought last February. The total mileage from then till now is 1,861—not very much, I admit, but competitions account for a big percentage, and 350 miles were run with rigid sidecar attached to the right-hand side.

I have kept a daily log of mileage, cost, and amount of petrol, accessories, licences, tyres, etc. The following are therefore facts as far as my machine is concerned, consequently I will not occupy your valuable space by commenting on them much.

Capital Expenditure.	£	s.	d.
5·6 h.p. Bat	58	0	0
Extra for enamelling whole of machine French grey, handle-bar being the only part plated	1	0	0
Two valves complete at 6s. 8d.		13	4
J.A.P adjustable pulley		12	6
Extra for Palmer cord tyres and Rich detachable tubes	2	0	0
Oil pump, hinged tank stoppers, oil gauge, and gauge filter for petrol		17	6
Horn		5	6
Carriage		18	0
Case of spare jets for B. and B. carburetter		2	6
Watawata spare belt	1	7	0
Cowey speedometer (S.H.)	3	4	0
Dust coat		16	0
Lamp and generator (S.H.)		12	0
Goggles		1	6
Registration		5	0
Total	£70	14	10

Running Expenses.	£	s.	d.	Cost per mile.
Back hub cup		4	0	.0258
Licences	1	5	0	.1612
Lubricating oil (one gallon, three pints still in tin)		4	6	.0290
Petrol (28 gallons altogether)	1	3	11	.1542
Tyre (S.H., retread)		15	0	.0967
Carbide		1	6	.0096
Carborundum powder for valves		1	0	.0064
Competition fees	1	9	3	.1384
Cleaning machine (unnecessary luxury indulged in once)		1	6	.0097
Patches, solution, etc.			3	.0026
Belt fasteners and punch, etc.		4	0	.0258
Plugs (S.H.)		2	0	.0129
Felt to line tool box		1	0	.0064
Spare glasses for goggles			6	.0032
Total	£5	13	5	.7309d.
Or less competition fees	£4	4	2	.5426d.

Practically all my running was done between the months of April and October inclusive.

One puncture only—in back wheel—due to good tyres blown very hard, this being permissible by the excellent Bat spring frame. Original back tyre still on; ribs just visible and no more: good for another 1,000, say. Front one replaced by smooth retreaded old cover. Thus, I have a split new Palmer cord on hand.

Original Shamrock-Gloria belt and Matchless fastener in excellent condition; no cracks in belt. Has not yet broken or pulled through; shortened twice owing to wet weather with sidecar attached. Watawata used occasionally for racing. The tubes behaved beautifully and required pumping very seldom.

Cylinders cleaned of deposit six times. Valves ground in ditto—a little each time.

The lubricating oil consumption is very low—2,977 miles to the gallon. I started with one gallon and have three pints left. This is solely accounted for by the J.A.P. automatic lubricator.

The engine gave every satisfaction, and no trouble whatsoever. The pulley is perfect. I adjust it with a 4in. King-Dick spanner only. As for the spring frame and other special features of the Bat machine they are more than can be desired. I could eulogise my bicycle at great length, but space forbids—if not your patience.

From the above it will be seen that I have a practically new machine, the only things that account for lost money being fuel and licences, practically all the other things being still on hand. The Bat won four firsts and one second, and has always been in the first three of a competition.

T. E. B. CHALMERS.

Engine Efficiency.

[5354.]—One hears a lot of talk nowadays about the great improvement that has been made in engine construction, and the much greater efficiency of the modern petrol engine as compared with its prototype of 1905 or 1906. A friend of mine has a 1905 or 1906, I am not sure which, Fafnir motor cycle, 76 × 76 mm., called 3 h.p. by the makers, but taking the 500 c.c. 3½ h.p. engine of to-day as a basis it is under 2½ h.p. This motor cycle periodically takes my friend, his wife, and a sidecar down to Brighton and back, averaging from eighteen to twenty miles per hour. The machine is pedalless, and the only hill that stops him is Handcross on the return journey, but by dropping his passenger at the bottom of the hill, the machine takes himself and sidecar up easily.

W. BOOTH.

Exeter M.C.C. Reliability Run to Penzance and back.—A. Western (3½ h.p. Kerry-Abingdon and sidecar), one of the survivors.

The Perfect Tricar.

[5355.]—In a recent issue of *The Motor Cycle*, I notice Mr. B. H. Davies mentions the perfect tricar to fill the gap between the sidecar and the cheapest light car.

Now I should like an opinion as to the requirements which would constitute the perfect tricar, as I consider it would help the inventor to know what to strive for. While waiting for this opinion I will give mine.

In the first place, to get over the great drawback, side-slip, it ought to have a front driving and steering wheel combined, with attractive appearance, a foot brake to the front wheel, and hand brakes to the two rear wheels, hand steering wheel with control levers, variable gear, similar to the Gradua, tyres easily removed, and driver and passenger to sit side by side. Price about £65.

H. PALETHORPE.

A Grumble Regarding Clubs.

[5356.]—May I put before you the position of myself and what must also be the position of a very large percentage of other motor cyclists.

About twelve months ago I became the possessor of a motor bicycle, and as I thought it was a good thing to have some official organisation at my back, I looked round for one to join. There was plenty of choice, and after some time spent in perusing your reports of various clubs and unions, I came to the conclusion that it would be better to join a local club, and get the (to me) problematical advantage of its organisation, in addition to the A.C.U., instead of the A.C.U.'s backing only. I therefore joined a local club.

Now all the advantage I have had so far has been to receive each week the *R.A.C. Journal*, which is to me absolutely uninteresting, and also from time to time notices of runs and other matters arranged by the club. Of course, I know I could go to the club rooms and race meetings, but I do not care to race, and if I want company I can always get friends to join me, which I like much better than meeting a lot of mixed amateurs and professional riders, who no doubt are excellent fellows, but whom I do not know from Adam.

My point condensed is this: What advantage or benefit do I get for my 10s. 6d. apart from the social side, which I do not require? A N 32.

[Our correspondent forgets free legal defence! One case and the subscription is saved.—ED.]

The Weatherproof Motor Cycle.

[5357.]—I have followed with great interest the letters of "Rex" and "Ixion" on that all-important question, "how to keep the motor cycle clean."

"Ixion's" idea is effective, but after a ride on a dusty day what does the machine look like?

I have been experimenting for the last few weeks with "white hard spirit varnish," and find two coatings have defied the weather of the last month.

I see no reason why it should not be equally as effective on the enamel.

I intend painting my machine all over with it at the first opportunty I get, and will let you know how it works.

HUGH BACON.

[5358.]—I have been interested in the various devices put forward and the discussion on making the motor cycle a more weather-proof vehicle.

One or two correspondents (and "Ixion," I believe) have mentioned galvanising (electro) as a finish, and I thought perhaps you would be interested in my experience with this.

About three and a half years ago I sent a short piece of steel cycle tube to Mr. Wainwright to be electro-galvanised, and when this was returned to me I threw it on to the garden in a place that is always fairly wet, and left it there for about five months. I think you will agree this was a good test, but the galvanised surface, except for being a little dull, was no worse, although the inside of the tube (where there had been no deposit) was thick with rust.

After this I decided to have my ordinary cycle (wheels, hubs, and everything) done, and after three years' use in all weathers it is little the worse, although some new parts that have been added since (pedals, head clip, and a back stay) are quite rusty already. I can confidently recommend this process to any motor cyclist who wishes to defy rust. It is a great thing for the wheels, and rims especially, as it prevents the bead of the tyres being rusted through before the tyres are worn out. I had my motor cycle wheel done last year, and have just taken off the back cover to examine the beaded edge. It is A1. There is no chipping like enamel.

I have no interest whatever in the process, but wish motor cyclists generally to know of a good thing. A. ASTON.

Twin-cylinder Sociables.

[5359.]—I read in your account of the Quarterly Trials that the A.C. Sociable put up a good performance on the hills and generally behaved well throughout the whole distance travelled. Perhaps some of the competitors who drove the A.C. will be able to tell me what the speed was up, say, Westerham and Titsey, and how these two hills were taken.

I am rather interested in these machines, as I believe that they are good all round, but I have always been of the opinion that they are much under-powered, and on that account have refrained from driving one until a more powerful engine was fitted.

I see no reason why the power should not be increased to, say, 8 h.p., and a twin engine fitted in place of the present single; this would make it much more flexible.

As the cylinders of the A.C. are fan-cooled the same system of cooling could be carried out with the twin cylinders. It would doubtless be interesting to hear what others have to say on this point.

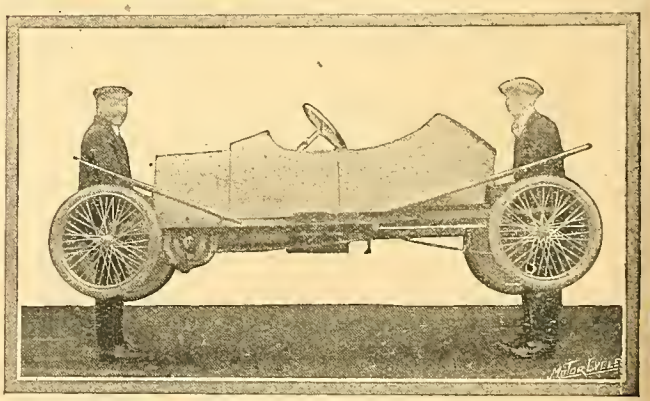
Although I read that the A.C. will touch 40 on the level it is a statement which I doubt very much; at all events, a little extra power is often very acceptable, and it cannot be said that there is much margin on a machine of this weight fitted with a 5-6 h.p. engine.

I am sure that if only the makers were to market a more powerful mount there are many drivers of high-powered cycles and sidecars who would be only too pleased to make a change if only on the grounds of the extra comfort to be obtained in the A.C. ILIKUM.

SUMMARY OF CORRESPONDENCE.

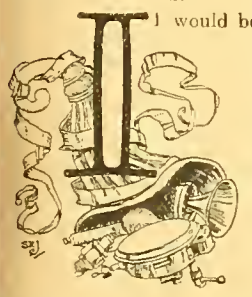
J. C. Prior writes in strong appreciation of the business methods of the Hanover Rubber Co., the makers of the Shamrock-Gloria belts and Shamrock-Excelsior tyres. He says, "I have had several business transactions with this firm, and I could not wish for greater courtesy and promptitude or more honourable dealing than I have experienced at their hands."

Dr. Charles S. Patterson, M.B., M.R.C.S., writes strongly criticising the action of the A.C.U. executive in substituting Titsey for Chalk Pit Hill in the Quarterly Trials. With reference to the regulation regarding minimum speeds on the hills he says: "Surely the greatest drawback of the motor cycle in the past has been that it could not climb hills slowly. Chalk Pit Hill would have shown us if such a machine is in existence."



A novel photograph of the L.M. quadcar, which is being exhibited at the Leicester Motor Cycle Show which opened yesterday and closes on Saturday.

INTERNATIONAL COMPETITIONS.



It would be perhaps egotistical to say that the leading article which recently appeared under the above title in *The Motor Cycle* had directly brought about the competition which is to take place this year between the North-West London M.C.C. and the Motorcycle Club de Lyon. If our leaderette has by any chance influenced the members of the N.W.L.M.C.C. in their praiseworthy endeavour to revive international competition we are glad, as by so doing they will assist in their small way in cementing the *entente cordiale*. The tour should be not only enjoyable, but interesting to those who have never as yet motor cycled on the Continent. Provided the members of the club choose their route carefully, they will find excellent roads to their destination, one of which we know nearly throughout the whole of its extent. Better than starting from Havre would be Dieppe, which slightly shortens the sea journey, and possesses the advantage of allowing the men to continue their journey in France for about fifty or sixty miles on the day of their arrival. We do not know if matters are yet sufficiently advanced to have enabled the members of the N.W.L.M.C.C. to have worked out their route.

A Tentative Suggestion.

A route that our experience can commend would be the following: Dieppe or Havre to Rouen and Louviers. If the journey is made from Dieppe, to Louviers is a run of just sufficient length to enable the competitors to reach there in time for dinner. It is a typical old French town with a glorious cathedral in front of the Hotel du Mouton. The next day Evreux is passed, Dreux, and then Chartres, which could be reached in time for lunch. The road is uninteresting for the whole of this journey, being over the great plain of Central France. Chartres, however, possesses the most magnificent cathedral in the whole of Europe, the beauties of which have to be seen to be fully realised. Orléans is a comfortable ride, and could be reached by tea time. The roads from Louviers so far are respectably good, and members may perhaps be tempted to turn the competition into a race, so straight are they. Orléans itself is a fine old town with a beautiful cathedral, also well worth a visit. If time can be spared it will be worth running down the Valley of the Loire and visiting the Chateaux of Chambord and Blois, which can be comfortably covered in the morning. In so doing the ontward journey may be made on one side of the river, and the return journey on the other. This is merely a pleasant suggested digression, enabling Orléans to be the resting place for the second night.

From Orléans the river should be kept on the right-hand side, and there is an excellent road with a very tolerably good surface through Gien, Cosne, La Charité to Nevers—a town where the third night could be spent, and at which there is excellent hotel accommodation. From Nevers on to Decize through Charolles the conditions of the country completely alter. It becomes more hilly and consequently more interesting. Through Digoin on through Charolles to Macon perceptibly steep hills are encountered, but, and we speak of two years ago, the surface was perfectly magnificent. At Digoin the Loire is left and at Macon is joined the Saône, the Rhone's most important tributary. It is said that from the bridge of thirteen arches, which crosses the river, a view of Mont Blanc may be obtained, but, of course, for this the weather must be exceptionally clear. It is now possible to reach Lyon, which is but seventy kilometres distant, either by Villefranche or Trevoux. Villefranche was a town founded in the twelfth century by Humbert IV., an age in which it was the custom for a feudal lord, when he set up a new town, to endeavour to attract settlers by granting them various privileges, hence the name of "Free Town"—Villefranche. One of those granted by Humbert was that to all who became burghers he would let land at a moderate sum, and allow them to beat their wives as much as they chose without fear or penalty provided death did not ensue.

In Lyon there is much to see, so much that any reference to it here would be quite out of place. The situation of the town is important, as it stands at the confluence of two rivers, the Saône and Rhône, and at the gate of the Alps.

Lyon to Chamonix.

A tour may be made from it eastward ever so little, and the rider strikes first the gentle undulations of the Jura, pretty wooded country traversed by good roads, which are reminiscent in places of the scenery through Cheddar Gorge only on a larger scale. Take but a day's run to Annecy, and there are the glories of the Swiss Lake District, though still in French territory. Forty-five miles further on is Chamonix, nestling at the foot of the grandest monarch of the Alps. Truly here is a country for a holiday! There are talks of speed trials and hill climbs. On the journey to Lyon the rider will probably have had his fill of speed, but hills would not have overpowered him. Could he but spare the time, he should tackle the Little St. Bernard Pass, the foot of which is about 134 miles from Lyon. This is a mountain pass, about sixteen miles in extent, rising in zig-zags from the bottom of a valley, it would seem, almost to the sky: a real test for a motor cycle engine.

AMERICAN CHAMPION'S VISIT TO ENGLAND.

We read in *The Motor Cycle Illustrated*, of New York, that Jake De Rosier will leave for England about March 15th. After riding in England it is his intention to make a racing tour of Scotland, France, Germany, Italy, and then possibly go on to Australia.

T.T. ENTRIES.

The following additional entries have been received for the International Tourist Trophy Race to be held on June 28th, bringing the total to twenty-nine:

G. Brough (one machine).
J. A. Carvill (3½ h.p. Triumph).
J. R. Alexander (4 h.p. Indian).
P. Butler (one machine).
Scott Engineering Co. (two machines).
S. A. M. Witham (one machine).

Four lightweights are among the total number.

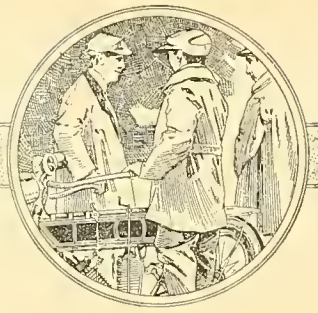
THE ALCYON MOTOR CYCLE IN ENGLAND.

Many of our readers know the French-made motor bicycle the Alcyon, which has been described and illustrated in our reports of French contests and the exhibits at the Paris Salon. Messieurs Gentil et Cie., 39, Rue Garnier, Neuilly-sur-Seine, who are the makers of this machine, will shortly be represented in England. The necessary business arrangements are in the hands of M. A. Chantala, 55, Rue Rennequin, Paris.

A SPECIAL SPRING NUMBER

of "The Motor Cycle" will be published on March 23rd. This issue will contain many interesting features, particulars of which will be annonnced at a later date. . . .

CURRENT CHAT



Time to Light Lamps

Special Features

(Greenwich).

Feb.	9th ...	... 6.0 p.m.
,,	11th ...	... 6.4 p.m.
,,	13th ...	... 6.8 p.m.
,,	15th ...	... 6.12 p.m.

Proposed County Club for Hampshire.

A meeting of representatives of the various Hampshire M.C.C.'s and all riders interested will be held at Winchester next Tuesday, the 14th inst., at 6 p.m., at the Royal Hotel

Stolen Motor Cycles.

Ernest P. Terry, 112, Gower Street, W.C., informs us that on Monday, the 30th ult., his motor bicycle was stolen by means of a trick. The machine in question was a 3½ h.p. Premier, 1910 model. Registered No. L.B. 2,664, engine No. 5,517, bicycle No. 5,540. We would again advise our readers on no account to allow prospective purchasers to have a trial run on a machine which it is proposed to sell unless a deposit is first made, either with the owner, or some responsible third party.

Military Motor Cyclists.

The Kent Cyclist Battalion (Territorial) is anxious to enlist a certain number of motor cyclists. The battalion headquarters are at Tonbridge, and there are companies at Tonbridge, Tunbridge Wells, Bromley, Chatham, Maidstone, Canterbury, Ashford, Ramsgate, and Folkestone.

Recruits would have to conform to the Territorial regulations, but would use motor cycles instead of push cycles at camp and on all outdoor parades. A special allowance is made for petrol and upkeep of motor cycles. Those wishing to join should apply to the Adjutant, Kent Cyclist Battalion, Tonbridge, or to the officer commanding the nearest local company.

Quarterly Trials Mems.

A. J. Luce, of Windsor, writes that he made a clean ascent of Westerham on his 8 h.p. Bat. His only stop was before reaching Warlingham to get warm and put on an extra scarf. Truly a vexatious reason for losing a non-stop certificate. Mr. Luce is a private owner, and his 8 h.p. Bat is the eighth motor cycle he has owned. He confirms Mr. Wilberforce's letter of last week as regards the excellent marking of the course and marshalling.

Gordon L. Fletcher explains that the reason of his failure on Titsey was due to the gear operating lever slipping into neutral. When the engine suddenly raced he imagined it was due to a broken belt, but observing the real trouble on dismounting, and without stopping the engine, he engaged the low gear and his little Douglas sailed merrily to the summit.

According to the programme the driver of the P. and M. with rear tandem attachment was G. W. Hughes, but his correct name is Hugo. We are told that his P. and M. is a 1909 model, which in the ordinary course of events will take an extra passenger up Westerham.

Leicester Motor Cycle Show.

Yesterday (Wednesday) the second Leicester Cycle and Motor Cycle Exhibition was opened at the Association Halls, East Street. The following makes of motor cycles are represented:

Bat and sidecar.	Triumph.
A.J.S	Hobart.
Singer.	Rudge-Whitworth.
Campion.	Enfield.
Ariel.	Douglas.
Bradbury.	New Hudson.
M.R.	Zenith-Gradua.
Rex.	Matchless.
N.S.U.	Kerry-Abingdon.
T.A.C. and sc	

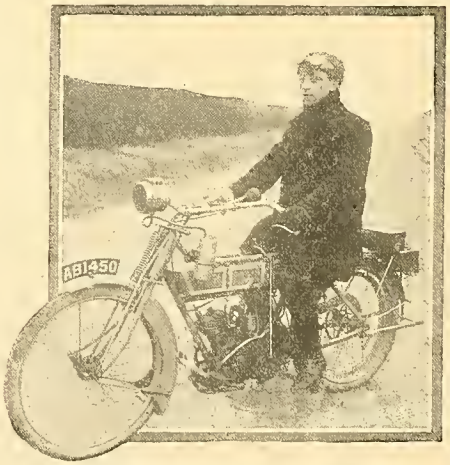
Quadcars and Runabouts.

Morgan. Bedelia. L.M.

Besides the above motor cycles, tyres are being exhibited by W. and A. Bates, Ltd., and the Leicester Rubber Co., as well as accessories and sundries.

Motor Cycle Show in Oxford.

A motor cycle show is being promoted for Oxford. It will be held in the new club rooms at Morris's garage, Holywell, from February 24th to March 4th. The organising secretary is Mr. R. S. Bishop



H. Creaves on the two-speed and free engine 2¾ h.p. Royal Enfield, who obtained a first-class certificate in the Quarterly Trial.

POSSIBILITIES OF THE SLIDE VALVE ENGINE.
THROUGH MONGOLIA (Conclusion).
Surrey v. Streatham Club Inter-team Trial.
QUARTERLY TRIALS: Official Awards.

Honister Pass Again Climbed.

In view of the discussion *re* the Honister Pass climb, a few members of the Westmorland M.C.C. rode over there last week-end with a view of climbing it by the much-discussed "old road." Two, we are told, were successful. Jack Braithwaite, of Staveley, on a 3½ h.p. single-geared, pedalless, single-cylinder motor cycle of his own make, and George Braithwaite, of Kendal, on a 3½ h.p. Zenith-Gradua. The climb was witnessed by Messrs. Thomson, Hutchinson, Braithwaite (B.), H. B. Harrison (assistant secretary of the club), and most of the inhabitants of Seatoller, which is at the foot of the pass.

Features of Leading American Motor Cycles.

Several novel devices were introduced on 1911 pattern American motor cycles at the New York Show last month. For instance, the Merkel gas throttle and oil feed are inter-connected so that more oil is fed to the engine as the throttle is further opened. The Reliance has a pressure fed oiling system, compressed air is forced into the oil tank from the crank case. The oil pipe reaches nearly to the bottom of the tank, and the air pressure on the surface of the oil forces the latter out past a regulating valve which feeds the oil as required. The Detroit has a spare tin for oil and petrol cunningly concealed in the top of an enlarged portion of the seat tube. The saddle is hinged and lifts up to remove or replace the tins.

A Long Push and the Cause.

An incident which should prove instructive to novices occurred the other day at Stoneleigh, near Coventry. A motor cyclist, who, unfortunately, was ignorant of the working and construction of his mount, encountered a friend, and after a mutual inspection and trial of each other's mounts they resumed their respective journeys, the one towards Coventry and the other towards Southam. The latter (the novice) had not proceeded far when his engine stopped. He could not diagnose the cause, and he was afraid to tamper with the mechanism, so he pushed his machine home all the way to Southam, and asked a friend who was more conversant with the mechanism than himself to look at it. The cause of the stoppage was found to be that the petrol tap had been turned off during the conversation. Tableau!

April a Busy Month.

Four open hill-climbing competitions are down for decision during April. There is the Oxford M.C.C. climb on April 8th, the Westmorland M.C.C. and Herts County A.C. events on Easter Monday, and the Bristol B. and M.C. competition on the 29th. On the 22nd April the A.C.U. second quarterly trial of 1911 will he held in the Yorkshire centre, starting from Harrogate.

All-British Mounts for the T.T.

H. Rem Fowler and S. C. Perryman (two prominent Birmingham competition riders) will ride T.T. Ariels in the race next June and all other leading competitions in the Midlands this year. Fowler, we hear, will use a special one lever Brown and Barlow carburetter with variable jet. This new pattern carburetter was illustrated and described in the Patents page on December 29th last. The T.T. Ariels will be all-British, having Simms magnetos.

The Trade and the T.T.

At the last meeting of the C. and I.C.T.U. the following resolution was passed among others: "That members of this Union do not compete in the Heavyweight Tourist Trophy Race if both single and twin-cylinder engines are included." The Auto Cycle Union has replied to this by the following: "In view of the fact that orders have already been placed by some entrants for their machines, the committee regrets that it is now too late to make such an alteration with regard to the race."

The Prince Henry Cup Tour.

Particulars of this tour, which is a friendly and social match between the Imperial Automobile Club of Germany and the R.A.C. of Great Britain, have now been published by the latter, and from them we extract, for the information and guidance of motor cyclists who may be interested, that the route in England and Scotland, starting on Monday, July 10th, will be from Southampton to Leamington, Leamington to Harrogate, Harrogate to Newcastle-on-Tyne, Newcastle-on-Tyne to Edinburgh, Edinburgh to Windermere, Windermere to Shrewsbury, Shrewsbury to Cheltenham, and Cheltenham to London. Friday, July 14th, will be spent at Edinburgh, and Sunday, July 16th, at Windermere.

Launch of H.M.S. "Thunderer."

The launch of the world's greatest battleship H.M.S. *Thunderer* on the 1st inst. wore quite a motor cycle aspect, as thanks to the courtesy of Messrs. Zenith Motors, Ltd., the following well-known motor cyclists and trade members were enabled to be present: Messrs. F. Straight, W. G. Bower, F. J. Barnes, A. G. Reynolds, R. G. Pye, O. C. Godfrey, G. Mann, W. Cooper, F. A. Hardy, J. A. Prestwich, and A. Pennington. Mr. Arnold F. Hills, chairman of the Thames Ironworks and Shipbuilding Co., and also chairman of Zenith Motors, Ltd., who for years has been bound hand and foot in the merciless grip of paralysis, made an impressive speech after the launch, from his invalid chair. Speaking of the keenness displayed in the building of the *Thunderer*, he mentioned that it had been difficult at times to get the men to leave off work. Keenness, he said, was predominant, in their works, and in the motor department, where the men had been preparing the Thames car for attacks upon record, they were so enthusiastic that they were quite loth to leave their tasks.

FUTURE EVENTS.

Feb.	9	Auto Cycle Union Lamp Trial at Brooklands.
,,	8-11	Motor Cycle Show at Leicester.
,,	16	M.C.C. Smoking Concert.
Mar.	18	M.C.C. Opening Run.
,,	18	B.M.C.R.C. first 1911 meeting at Brooklands.
,,	25	Meeting at Brooklands.
Apr.	8	Oxford M.C.C. Open Hill Climb.
,,	14-17	M.C.C. London-Land's End Trial and Easter Tour.
,,	14-17	Herts County A.C. Harrogate Tour and Open Hill Climb near Harrogate.
,,	17	Westmorland M.C.C. Open Hill Climb on Shap Fell.
,,	22	A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,,	29	Bristol B. & M.C. Open Hill Climb.

A Link with the Past.

Probably there is no more useful milestone remaining near London than the venerable and well-preserved stone standing at High Street, Beckenham, at the junction of the Wickham-Bromley roads. The original Roman numerals and lettering remain, and distances and

direction to London Bridge, Croydon Market Place, Bromley Market Place, Wickham, etc., are given. Laid in 1743, it has twice been restored—in 1847 and 1887.

A Reader's Suggestion.

The Federation of American Motor Cyclists, which is the name of the organisation in the United States controlling the pastime of motor cycling, has adopted the following scheme for propaganding its objects among American motor cyclists. The scheme is to supply every manufacturer of motor cycles in the United States with envelopes containing circulars describing the benefits of membership in the F.A.M. These envelopes contain all the printed matter relating to the federation, and by an arrangement with American manufacturers it is placed in the toolbag of every machine sent out. A reader suggests that the A.C.U. should endeavour to secure the kind offices of British manufacturers in the same manner. What has the A.C.U. to say?

A.C.U. Decisions.

The items published in last week's issue of *The Motor Cycle* under the heading "Important Auto Cycle Union News," have been agreed to by the General Committee. The chief items, it will be remembered, included the decision to hold the six days' trials from a centre either Harrogate or York, the granting of permits to the Herts County A.C. (Motor Cycle Section), and the drawing up of programme of the International Race Meeting, June 10th.

Membership.

The 5s. scheme of membership has met with great success, as a large number of applications have been received.

Affiliations.

The following clubs have become affiliated to the governing body: The Mersey Motor Club, the Putney and District, the North Middlesex, and the Derby and District Motor Cycle Clubs.

Permit.

A permit has been granted to the Westmorland M.C.C. to hold an open hill-climb on Shap Fell on Easter Monday. The classes are detailed on our Club News page.

Fixtures.

Annual general meeting, Thursday, March 23rd, at 7.30 p.m. It is hoped that this will be held in the new R.A.C. premises. Annual general meeting of private members, Thursday, March 2nd, at 6 p.m. General committee, 7 p.m.

Hedge Trimming.

The Roads Improvement Association is supporting the Tiverton Rural District Council and its officers in their efforts to deal with those farmers and land-owners who refuse to trim their hedges in the interests of the safety of road travellers and the general public. The Council has now resolved, at its last meeting, to prosecute thirteen defaulters. All road users will heartily endorse the Council's decision, as not only do overhanging hedges prevent the proper drying-out of the surface of the road, but also expose all forms of traffic upon the highway to unnecessary danger.

Surrey v. Streatham Club's Team Trial.

A group of competitors on the top of Westerham Hill. Some are engaged in raising their gear ratios after lowering them for the ascent of the hill.

SATURDAY last broke rather dull when, at an early hour, members of the Streatham and District and Surrey Motor Cycle Clubs started from Epsom to compete for the cup presented by Mr. B. Marians. The thaw on Friday completely upset the roads. From a state of perfection rarely attained at this time of the year they degenerated into such a quagmire of grease and dirt that none but the most ardent motor cyclist would venture out upon them.

Those who started from the King's Head, Epsom, were the following: F. W. Barnes (3½ h.p. Zenith Gradua), W. Pratt (3½ h.p. P. and M.), S. T. Tessier (8 h.p. Bat), R. G. Nye (3½ h.p. Triumph), E. B. Ware (8 h.p. Chater Lea and sidecar), P. F. Hunter (8 h.p. Zenith Gradua and sidecar) representing the Streatham and District M.C.C., and F. A. McNab (4 h.p. Trump-Jap), A. J. Luce (8 h.p. Bat), A. L. Ommaney (4 h.p. Trump-Jap), A. Baker White (4 h.p. Trump-Jap), C. E. Gammon (3½ h.p. Triumph), and A. N. Higgs (5-6 h.p. A.C. Sociable), represented the Surrey M.C.C.

Two sidecarists having a friendly dust-up on the road between Godstone and Westerham. The leading combination is E. B. Ware's Chater-Lea, and behind him are the Bros. Hunter in their 8 h.p. Zenith-Gradua.

Other riders competing jointly in the reliability trial were C. J. Feeney (3½ h.p. Triumph), J. H. Jeffery (3½ h.p. Zenith Gradua tricycle), P. Mitchell (four-cylinder F.N.), A. S. Bright (2½ h.p. New Hudson), H. A. Johnson (3½ h.p. Triumph), R. Surridge (3½ h.p. Bradbury), R. Mundy (3½ h.p. Triumph), W. O. Oldman (3½ h.p. Zenith Gradua), C. E. Davies (5-6 h.p. Rex and sidecar), D. R. Greig (3½ h.p. Precision), and J. Davy (3½ h.p. Bradbury).

The Start.

The start took place at 8.30 a.m., and at the outset the appalling state of the roads made itself soon apparent. The route lay through Ewell, North Park, Burgh Heath, Reigate, Redhill, Bletchingley, to Godstone. The steep ascent out of Redhill was found to be very trying owing to the heavy nature of the surface and called for more than one dismount. But the section from Godstone to the top of Westerham was the one that really mattered, as between the two latter points the men were forbidden to dismount, and the performances on Westerham Hill were carefully observed.

From the summit the route was on to Keston and through Addington, Sanderstead, Purley, Caterham, and back to Godstone. The last portion was covered four times in all, twice before lunch and twice after.

Ascent of Westerham.

The first ascent of Westerham Hill proved the undoing of several—Ommaney, Nye, Surridge, White, Grey, and Mitchell failed, while Jeffery gave up at Godstone and helped the other officials at the corner in that village where the men turned on to the Westerham Road.

As regards the performances on the hill, Barnes made a fine ascent, while Tessier, Ware, Hunter, Luce, Johnson, Davy, Mundy, and Higgs made excellent performances. Pratt, Oldman, Davies, and Gammon also came up in good form. McNab had had his fill, as his machine was far too highly geared, so he retired, and on his way back to Godstone suffered a puncture, while Surridge also said he had had enough, declaring he would finish the first round and then retire. Nye's machine suffered in the same way as McNab's, but after the gear had been twice lowered he came up in good form on his third attempt.

On the next round Ommaney, Greig, and White dismounted, but good performances were made by Nye, Barnes, Gammon, Tessier, Pratt, Hunter, Ware, Higgs,

Surrey v. Streatham Club's Team Trial.—

An awkward corner in Westerham village. The rider depicted is A. S. Bright (2¼ h.p. New Hudson, Armstrong Triplex three-speed gear).

Davy, Davies, Mundy, Feeny, and Johnson. Bright came up well, but pedalled. The first part of the observed section was quite stiff, as there are a succession of sharp steep hills, the severity of which was intensified by the shocking road surface, while the culminating point was Westerham, which had to be climbed four times in all. At the completion of the second round the men drove straight into the yard of the Clayton Arms, Godstone, and in the hotel an excellent lunch was served.

The Streatham team was intact, but the Surrey men had lost heavily. McNab, Ommaney, and Luce were all in trouble. White had had enough, and there was talk of abandoning the trial, but after further discussion it was decided to finish it after lunch. The Messrs. Ayres carefully observed the performances on Westerham on the fourth round. Tessier, Barnes, Pratt, Mundy, Greig, Higgs, Bright, Ware, and Davies, all came up in good form, but Hunter's sidecar combination made a really splendid performance. It was quite a fine sight to see the two brothers swinging round the bends, a few years ago unclimbable with a sidecar attachment. Nye, Ommaney, and Gammon dismounted, while Feeney came up with a knocking engine. At the end of the third round Davy's engine was making weird noises, owing to a loose connecting-rod bearing, but he turned up smiling again on the fourth round, and satisfactorily climbed the hill.

As the fourth round was completed the men turned off at Godstone, and returned to the starting point by Bletchingley, Redhill, Reigate, North Park, and Ewell.

Streatham Team wins the Marlans Cup.

All six members of the Streatham team, F. W. Barnes (3½ h.p. Zenith), W. Pratt (3½ h.p. P. and M.), S. T. Tessier (8 h.p. Bat), R. G. Nye (3½ h.p. Triumph), E. B. Ware (8 h.p. Chater Lea and sidecar), and G. F. Hunter (8 h.p. Zenith and sidecar), finished within schedule time, thus winning the cup and qualifying for a medal. Of the Surrey M.C.C., A. L. Ommaney (4 h.p. Trump-Jap), C. E. Gammon (3½ h.p. Triumph), and G. N. Higgs (5-6 h.p. A.C. Sociable) finished, all qualifying for a medal. Of the others, of the Streatham Club, A. S. Bright (2¼ h.p. New Hudson), H. A. Johnson (3½ h.p. Triumph), R. Mundy (3½ h.p. Triumph), and W. O. Oldman (3½ h.p. Zenith) finished: and of the Surrey M.C.C., C. J. Feeney (3½ h.p. Triumph) finished. D. R. Greig (3½ h.p. Precision) arrived forty minutes too early, and was disqualified. Of the twenty-five who started, fourteen arrived within schedule time.

TROUBLE CAUSED BY DAMP FIBRE.

Several instances have come to our notice lately of misfiring or total cessation of firing, which can be traced to binding of the rocking arm on the contact breaker of Bosch and Simms high tension magnetos. The rocker or bell crank lever has a stud which fits into a fibre-lined hole in the contact breaker plate, and in damp weather, or when oil gets on the fibre, it causes the latter to swell just sufficiently to prevent the rocker working freely. The obvious remedy is to emery cloth the stud and remove all rust, and very slightly enlarge the hole in the fibre by means of a reamer or rat tail file.

The luncheon stop at Godstone. An animated scene in the yard of Ye Clayton Arms.

JANUARY QUARTERLY TRIALS.

OFFICIAL AWARDS.

THE following riders made non-stop runs in the A.C.U. January Quarterly Trials, held on the 28th ult., over the course Croydon-Hastings-Croydon, and have been awarded first-class certificates. Below will also be found the official hill-climb results on the two test hills, Westerham and Titsey.

Non-stops. First-class Certificates.

J. Stevens (2½ A.J.S.)
F. Philipp (3¾ Scott)
H. Greaves (2¾ Enfield)
J. W. Woodhouse (3½ Calthorpe)
*A. C. Robbins (3½ Humber)
B. Alan Hill (3½ Rudge-Whitworth)
*V. Armstrong (3½ Premier)
A. D. Arter (3½ James)
V. J. Surridge (3½ Rudge-Whitworth)
H. W. Oakley (7 Wilkinson T.A.C.)
B. J. Buckman (4 Buck)
C. S. Burney (3½ Rudge-Whitworth)
*V. Wilberforce (5 Indian)
*A. H. Hawkins (3½ Premier)
*H. G. Dixon (2½ New Hudson)
Howard Riddell (2¼ Forward)
*E. C. Jarvis (3½ Triumph)
*H. A. Cooper (3½ Bradbury)
*Cyril Bailey (3½ Clyde)
H. C. Newman (3½ Ivy-Precision)
*Rex Mundy (3½ Triumph)
*Rev. E. P. Greenhill (2¾ Douglas)

PASSENGER MACHINES.

*E. B. Ware (8 Chater-Lea and sc.)
E. Dixon (5-6 A.C. Sociable)
F. Hill (5-6 A.C. Sociable)
F. Smith (5-6 Clyno and sc.)
G. N. Higgs (5-6 A.C. Sociable)
J. Portwine (5-6 A.C. Mighty Atom)
J. Munday (5-6 A.C. Mighty Atom)

* Denotes private owner.

Hill-climb Results.

Order of merit on Westerham Hill, giving variations from standard times:

Extract from rules: "At the end of the year a silver cup will be awarded to the driver of the machine which has ascended the timed hills closest to the standard, subject to his having obtained four first-class certificates. The following will be the standards:

"For machines not exceeding 300 c.c., fifteen miles an hour.

"For machines above 300 c.c., twenty miles an hour.

"For passenger machines, fifteen miles an hour."

	M.	S.
LIGHTWEIGHTS.		
J. Stevens (2½ h.p. A.J.S.)	0	17⅗
H. G. Dixon (2½ h.p. New Hudson)	0	34
OTHER MOTOR BICYCLES.		
C. S. Burney (3½ h.p. Rudge)	0	1
C. Bailey (3½ h.p. Clyde)	0	7⅖
A. C. Robbins (3½ h.p. Humber)	0	8⅘
J. W. Woodhouse (3½ h.p. Calthorpe) ...	0	9⅖
H. W. Oakley (7 h.p. T.A.C.)	0	13
F. Philipp (3¾ h.p. Scott)	0	18⅗
V. J. Surridge (3½ h.p. Rudge)	0	26⅖
B. A. Hill (3½ h.p. Rudge)	0	27⅕
W. H. Watkins (3½ h.p. Premier)	0	30⅗
Rex Mundy (3½ h.p. Triumph)	0	30⅘
H. Greaves (2¾ h.p. Enfield)	0	31⅕
A. D. Arter (3½ h.p. James)	0	31⅘
V. Armstrong (3½ h.p. Premier)	0	32⅖
B. J. Buckman (4 h.p. Buck)	0	32⅗
V. Wilberforce (5 h.p. Indian)	0	35
H. C. Newman (3½ h.p. Ivy-Precision) ...	0	39
A. J. Luce (3½ h.p. Premier)	0	46⅘
H. A. Cooper (3½ h.p. Bradbury)	0	53⅘
PASSENGER MACHINES.		
F. Smith (5-6 h.p. Clyno and sc.)	0	26⅕
G. N. Higgs (5-6 h.p. A.C. Sociable) ...	0	29⅖
J. Munday (5-6 h.p. A.C. Mighty Atom) ...	0	40⅗
J. Portwine (5-6 h.p. A.C. Sociable) ...	0	40⅘
E. Dixon (5-6 h.p. A.C. Sociable)	0	44⅖
E. B. Ware (8 h.p. Chater Lea and sc.) ...	0	44⅗
F. Hill (5-6 h.p. A.C. Sociable)	1	0

Titsey Hill.

LIGHTWEIGHTS.		
J. Stevens (2½ h.p. A.J.S.)	0	2⅕
H. G. Dixon (2½ h.p. New Hudson)	0	10
OTHER MOTOR BICYCLES.		
C. S. Burney (3½ h.p. Rudge)	0	0⅘
J. W. Woodhouse (3½ h.p. Calthorpe)... ...	0	4⅕
H. W. Oakley (7 h.p. T.A.C.)	0	5⅖
C. Bailey (3½ h.p. Clyde)	0	7⅘
A. C. Robbins (3½ h.p. Humber)	0	19⅖
B. A. Hill (3½ h.p. Rudge)	0	19⅖
V. Wilberforce (5 h.p. Indian)	0	19⅗
Rex Mundy (3½ h.p. Triumph)	0	23⅕
F. Philipp (3¾ h.p. Scott)	0	24⅗
A. H. Hawkins (3½ h.p. Premier)	0	28
V. Armstrong (3½ h.p. Premier)	0	29⅗
H. C. Newman (3½ h.p. Ivy-Precision) ...	0	30⅘
H. A. Cooper (3½ h.p. Bradbury)	0	31⅘
B. J. Buckman (4 h.p. Buck)	0	33⅕
A. D. Arter (3½ h.p. James)	0	36
H. Greaves (2¾ h.p. Enfield)	0	36⅖
V. J. Surridge (3½ h.p. Rudge)	0	36⅘
E. C. Jarvis (3½ h.p. Triumph)	1	1⅘
PASSENGER MACHINES.		
F. Smith (5-6 h.p. Clyno and sc.)	0	19⅖
E. B. Ware (8 h.p. Chater Lea and sc.) ...	0	57⅖
G. N. Higgs (5-6 h.p. A.C. Sociable)	0	58
E. Dixon (5-6 A.C. Sociable)	1	3⅗
J. Portwine (5-6 h.p. A.C. Sociable)	1	20⅕
F. Hill (5-6 h.p. A.C. Sociable)	1	21⅖
J. Munday (5-6 h.p. Mighty Atom)	1	29⅖

Statistics.

Sixty-five started out of sixty-six entrants. Twenty-nine gained first-class certificates, thirty gained ordinary certificates, and six retired.

The 8 h.p. Morgan runabout missed a first-class certificate through not being equipped with magneto ignition.

The Judges' Report.

The first of the series of quarterly trials for this year was held on Saturday, the 28th January, over a new course, starting from Croydon, and proceeding *viâ* Westerham and Tonbridge to Hastings, returning by way of Uckfield and Limpsfield.

The course, about 127 miles, was in a very fair condition considering the time of year, the chief obstacles being a few patches of unrolled stones on some of the roads, these, however, not in sufficient quantities seriously to impede competitors.

There were two timed hills, and one observed, the latter being at Warlingham, and the two former at Westerham and Titsey. It had originally been intended to make Chalk Pit Hill one of the timed ascents, but it was in the opinion of the judges in an unsafe condition, the approach and the greater part of the hill being a mass of sticky mud. Some competitors might possibly have negotiated it successfully, but, in any case, the ascent would have been more in the nature of a trial of the rider's skill than a test of the merits of the machine.

There were sixty-six entrants, only one of whom failed to start, on account of an accident two days previously. Fourteen of these rode lightweight motor bicycles, thirty-three heavies, one a three-wheeled runabout, and eighteen passenger machines of various types.

Considering the fairly easy nature of the course, and the splendid weather, the results are somewhat

January Quarterly Trials.—

disappointing. Only twenty-nine machines have been awarded first-class certificates, thirty competitors having made involuntary stops of one sort or another, and six machines retired for various reasons.

One entry, the Morgan Runabout, would have received a first-class certificate, but it was found, unfortunately, that it did not comply with the conditions laid down in the rules, being fitted with accumulator ignition, whereas magneto ignition is compulsory.

Magnetos were found to be in most cases well protected from wet and dirt, but in one or two instances a little more care would have been advantageous; and on one machine the terminals were perilously near the driving chain.

At the conclusion of the trials it was observed that the majority of crank cases were very clean—in some cases extraordinarily so—and it is evident that makers have lately paid more attention to this subject.

Various types of mudguards were fitted, but no example of any distinct advance on former trials.

There were several machines entered which were newcomers to the trials, notably the 7 h.p. T.A.C., two of which took part, and both would have received first-class certificates but for the fact that one suffered a slight accident to the stand, which caused a stoppage of a moment. The other one was successful in obtaining the award.

Other machines which took part for the first time in the Quarterly Trials, and received first-class certificates, were the Calthorpe, Rudge-Whitworth, New Hudson, Buck, Forward, and Ivy-Precision.

The tables showing the order of merit of competitors on the two test hills are very interesting; it will be seen that in both cases the same riders came nearest to standard time.

The work of the judges was considerably lightened by the splendid enthusiasm shown by the many marshals and observers on the route, whose reports were invaluable.

Judges { H. GILLARD COVE. / DOUGLAS K. HALL.

IS THE VERTICAL CYLINDER BEST?

BEFORE Mr. Pratt's letter [No. 5285] appeared in *The Motor Cycle*, some cogitations arising from an inspection of one of the best motor bicycles at the Paris Show had convinced me that it is a very open question whether the vertical position of the cylinder is the best. There is a good deal to be said for sloping a single cylinder like the front cylinder of a V twin, say, parallel to the down tube. True the front cylinder of a twin is liable to be under-lubricated, but that is not due to the sloping, but to the fact that the rear cylinder gets the first pull at the oil and takes a good deal more than its share. This would not be the case with a sloped single cylinder.

The position has been well tried—and retained—on the Motosacoche, the single Moto-Rêve, and a number of other light machines, besides the Phelon and Moore and Scott, and there seems no reason why it should not be equally free from trouble in the case of ordinary 3½ h.p. tourist machines.

The engine could be held more securely than at present, as it would be quite easy to carry a stay from the top of the head to the down tube, and this would be specially advantageous in the too numerous cases in which the pull of the belt tends to rock the motor in its cradle, owing to the fact that the chain stays lie in a plane passing considerably above the axis of the crankshaft instead of through it.

The Cooling Question.

Again, cooling should be promoted, as the top of the combustion head would be more directly presented to the draught and a straight exhaust pipe can be used. Further, in its inclined position the cylinder would take up less vertical space, and its removal and replacement could be more easily effected without removing the engine as a whole from the machine, as it would not be obstructed by the tube under the tank. Indeed, it should be possible to get a little more ground clearance or a little more tank depth, or both, without interfering with the detachment of the cylinder. There would be more room to get at the sparking plug, and there would be no risk of the plug shorting to the frame as at present. But perhaps the most practical advantages of all are in connection with the magneto position. Behind the cylinder is a very desirable position, as it is both higher and drier than in front, but it is by no means easy to find a place behind the vertical motor that does not involve corresponding troubles and defects.

If the magneto is to be kept near enough to the valve gear to secure a short spur wheel or chain drive, it has either to be placed under the carburetter, where there is a risk of setting the machine on fire from dripping petrol or vapour becoming ignited, or the carburetter has to be set some inches further back and a correspondingly longer inlet pipe employed, though this latter may not be a serious disadvantage. But if the cylinder is sloped forward the carburetter can still be coupled up short to the inlet port, as it can be brought in front of the magneto.

One can seldom make alterations, let alone improvements, without introducing certain disadvantages, but the question is, would these disadvantages outweigh the advantages I have mentioned? ENGINEER.

A new pattern Chater-Lea sidecar. The handsome cane body has the latest torpedo type front—a wind-cutting design which promises to become popular

THE LAMP TRIALS.

Lack of Support.

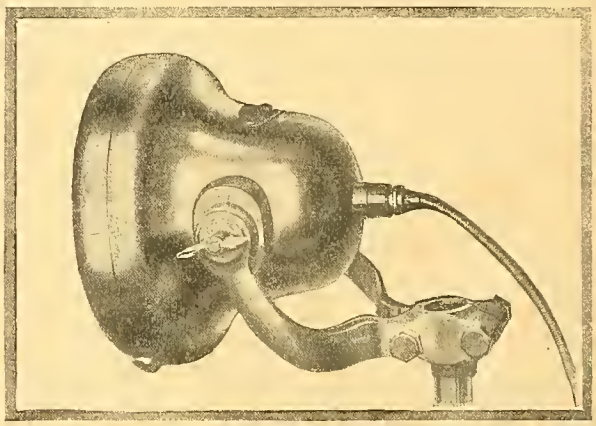
UNFORTUNATELY only four entries have been received for the A.C.U. Lamp Trials, which were due to take place to-day (Thursday), at Brooklands. The entries are: C. A. Vandervell and Co. (two C.A.V. electric head lights), Seabrook Bros. (one Solar acetylene), and Rotax Motor Accessories Co. (one Rotax acetylene). Owing to the small number of entries, it was decided on Tuesday to abandon the trial. We append an illustration and description of an electric head light, two of which were entered by Vandervells.

It will be noticed that the exterior is smooth and free from projections. This is a great feature, as it renders the cleaning of the lamp an easy matter. Another great point is the reflector, which is the outcome of many experiments and much research. It is constructed of a very hard close-grained metal coated with pure silver, and has an optically true surface. Messrs. Vandervell and Co. have taken great pains to render their lamps optically correct, and the result of their scientific researches has been to produce an electric lamp which gives a magnificent light.

The new type of lamp holder has a plug connection and bayonet fitting combined. This ensures good contact, and as the adapter has to be turned every time the plug is inserted the contacts are always kept clean. The adapter is fitted with a new armoured cable which is better than flexible wire both as regards appearance and durability. The lamp gives an excellent light with a four volt bulb, but with an eight volt lamp and battery it should satisfy the most exacting motor cycle rider.

Large v. Small Generators.

"Ixion" writes: "I quite agree with our special contributor's criticism upon the regulations under which the A.C.U. penalises small generators in their proposed lamp trial. Two heads are better than one, and I personally have always preferred two cheap, small, shoddy generators to one large and costly sample. I have yet to unearth a big generator which is quite as efficient on its last half-charge as on its first half-charge, and for many years past my practice on all prolonged and important night rides has been to carry a brace of small or medium-sized generators. If either fails or becomes exhausted the other is always available for instant use without the annoyance of having to clear out a mass of sodden sludge or trace a minute blockage in the water system. I have often had occasion to congratulate myself on this practice. Sometimes a generator falls off and is damaged. Sometimes a water valve becomes deranged, and drowns all the carbide beneath it. Sometimes a generator becomes exhausted. Under all these circumstances I can proceed without delay, probably without even dismounting; and if repairs and overhauls are inevitable, there is a chance of performing them with the lamp burning instead of in darkness. I am all against carrying a full-sized automobile generator on a bicycle, and I know many car generators which will not last for four hours."



C.A.V. electric headlight entered for to-day's A.C.U. lamp trials, which have been abandoned owing to lack of entries.

CLUB NEWS.

Coventry and Warwickshire M.C.

Tickets for the annual dinner, to be held on Tuesday, the 21st inst., at St. Mary's Hall, Coventry, are now ready. The charge is 7s. each, and application should be made to Mr. Eric W. Walford, 19, Hertford Street, Coventry.

B.M.C.R.C. Monthly Race Meeting at Brooklands.

The following are the dates of the race meetings at Brooklands which have been arranged by the British Motor Cycle Racing Club: April 26th (Wednesday), May 17th (Wednesday), June 7th (Wednesday), July 26th (Wednesday), August 26th (Saturday), and September 23rd (Saturday).

Bombay M. and A.C.C.

A club which will be known as the Bombay Motor and Auto Cycle Club has been founded in Bombay with the object of promoting and developing motoring and motor cycling in Western India. It is intended to run the club on the lines of mutual help and sociability, and eventually to organise competitions. It is proposed to affiliate to the governing body in England. The membership at present is thirty; entrance fee 6s. 8d.; subscription, 2s. 8d. a month. Mr. W. J McCanlis, stores department, B.B. and C.I. Railway, Parel, Bombay, has informed us of the founding of this club.

Great Yarmouth and District M.C.C.

The annual general meeting is to be held at headquarters on Wednesday, February 15th. In consequence of Mr. H. Collins having resigned, another secretary will be elected in his stead. Other officers will be elected at this meeting, and all members are requested to attend.

Middlesbrough and District M.C.C.

The annual ball will take place to-morrow (Friday) at the Co-operative Hall, dancing to commence at 8.30 p.m. A novelty is being introduced in the shape of a presentation brooch for each lady. The design of the brooch depicts Sir Bibendum, of Michelin tyre fame. On the 28th inst. the annual hot-pot supper will be held at headquarters.

Lewes M.C.C.

The first annual general meeting of the above club was held at the White Hart Hotel, Lewes. The chair was occupied by Mr. Stanley Langridge. The following officers were elected for 1911: Captain and chairman, Mr. Stanley Langridge; treasurer, Mr. S. C Sharpe; hon secretary, Mr. A. L. Russell.

The committee is preparing an active programme for 1911, and intending members should write to the hon secretary, Mr. A. L. Russell, Saxthorpe, Lewes.

Club News.—

Cardiff M.C.

This club will hold a whist drive and dance on Wednesday, the 22nd inst., and on Wednesday, March 1st, Mr. W. G. McMinnies will deliver a lecture.

Yeovil and District M.C.C.

The above club was formed in Yeovil on the 28th ult., fifteen members being enrolled at once. Prospective members should communicate with the hon. secs., P. W. Moffat and C. Williams, 4, Silver Street, Yeovil. The subscription is 5s., and the entrance fee 2s. 6d. It has been decided to affiliate to the A.C.U.

Worcestershire M.C.C.

The annual dinner will be held on Saturday, February 18th, at "Hop Market Hotel," Worcester (headquarters), at 7.30 p.m. All motor cyclists in the district are cordially invited to attend. Tickets and all information can be obtained of the hon. sec., Mr. Ernest W. Cooke, Foregate Press, Worcester.

Herts County A.C. (Motor Cycle Section).

The annual general meeting was held at the Euston Hotel, N.W., on Tuesday, the 31st ult., when the motor cycle section was well represented. Among the other business, a new scheme of membership was formulated, to cater for motor cyclists in the county who do not care to take an active part in the competitions promoted by the club. Under this motor cyclists may become associates of the club for a period of one year at a fee of 5s., and among other advantages associates will enjoy the full benefits of the A.C.U. affiliation scheme.

The first annual dinner and presentation of prizes will take place on the 16th inst. at 8 p.m. at the Pea Hen Hotel, St. Albans. An interesting programme is being arranged.

Walthamstow M.C.

The new committee met on Wednesday, February 1st, at headquarters, the Rose and Crown, Hoe Street. Mr. George West occupied the chair, supported by the captain and hon. sec., Messrs. W. H. Applebee and J. W. Percival. A silver cup was offered by the chairman for an inter-club event, and it was proposed that the hon. sec. be asked to arrange a competition. Mr. W. H. Applebee proposed a vote of thanks to Mr. West for his donation. Many valuable trophies are now possessed by this club. The opening run is on April 2nd.

Mr. W. H. Applebee seconded Mr. J. H. Kerr that the standard (200 miles) rides for the silver cups presented by the club should start on April 1st and be withdrawn after October 1st.

A lantern lecture will be held at headquarters on March 2nd, and a hearty welcome is extended to visitors. The same remark also holds good for the club supper on March 16th.

Members who wish to support the Woodford meet should write to Mr. J. W. Percival, 13, Church Hill, Walthamstow.

Bristol B. and M.C.

The above club will hold an Open Hill Climb on Saturday, April 29th, within a radius of fifteen miles of Bristol, under A.C.U. rules. The events will be as follows:

1. Lightweight class.—Engine capacity, 340 c.c.; weight, 130 lbs.
2. Touring class.—Engine capacity, 500 c.c. for single-cylinder and 750 c.c. for multi-cylinder machines.
3. Touring class.—Engine capacity, 500 c.c. for single-cylinder (fixed geared machines).
4. Ladies' class.
5. Racing class.—For engines of 1,000 c.c.
6. Passenger class.—For engines of 1,000 c.c.
7. Racing class.—For engines of 500 c.c., for single-cylinder machines.
8. Club event.—Engine capacity, 500 c.c. for single-cylinder or multi-cylinder for solo machines, and 1,000 c.c. for single-cylinder or multi-cylinder for passenger machines.
9. Amateur lightweight (A.C.U. definition).—Engine capacity, 340 c.c.; weight, 130 lbs.

No pedalling allowed in any event. Entries close Saturday (first post), April 22nd.

Entry fees: One event, 10s. 6d.; two events, 18s.; three events, £1 1s.; extra events, 3s. each.

Prizes will be club's standard gold, silver, and bronze medals.

For entry forms, apply Philip Grout, hon. secretary motor section, Roseville, Warmley, near Bristol.

Coventry and Warwickshire M.C.

On Saturday last the committee were invited to tea at Mr. J. R. Haswell's house at Crick, near Rugby. The party motored over from Coventry about 3 p.m., and were joined at Crick by a few of Mr. Haswell's Rugby friends. A most enjoyable evening was spent. A vote of thanks was accorded Mr. and Mrs. Haswell for their kind hospitality.

Westmorland M.C.C.

An open hill climbing competition will be held at Shap Fell next Easter Monday, when the following classes will be included: 1, lightweights; 2, single-cylinders; 3, twins. A.C.U. rules, formula, and definitions used throughout. In addition two classes are to be held for members only, viz., 1, singles; 2, twins. The telephone will be used, and correct timing is assured.

Sutton Coldfield A.C.

To-morrow (Friday), at headquarters, Mr. S. C. Perryman has kindly consented to deliver a short lecture entitled "Inns and Hostelries," in which he will approach his subject from both an architectural and historical point of view.

Not wishing the Midlands to feel in the background in the way of promoting winter competitions of a sporting nature, the Sutton Coldfield Automobile Club has decided to hold an open reliability trial on Saturday, the 25th inst., subject to a permit being granted by the A.C.U. A silver cup has been kindly presented by Mr. F. S. Whitworth, which will be known as the "Colmore Cup," to be awarded, together with a gold medal, to the competitor making the best performance throughout the trial. The captain, Mr. J. St. John, 33, Fountain Road, Edgbaston, is acting as hon. sec. for the trial.

Edinburgh M.C.C.

The Edinburgh club will in due course announce proposals for the 1911 Scottish trials which they hope to hold again this summer. Last year the month chosen was June, and the date proved a little too early for serious trade support. July will probably be chosen this year, and it is hoped that a goodly measure of the trade as well as amateur support will be given. The amalgamation scheme is proving popular, and in a circular recently issued it is proposed to organise a certain number of competitions annually, to provide a convenient meeting place in a convenient locality, to endeavour to encourage the social side by billiard handicaps, whist drives, lectures, etc., and further the interests of motor cyclists in particular. Founder members will take a £1 share, and subsequent members will be required to pay an entry fee. The subscription will be 10s. per annum.

Edinburgh Clubhouse Scheme.

The interim secretary, Percy E. Tolfree, 47, Falcon Avenue, desires to have in hand all promises of support for the above project by the 11th inst., so as to lay before the committee some tangible warranty for the further development of the scheme, otherwise a serious set-back may possibly be encountered. Mr. Tolfree states that there is a large amount of growing enthusiasm being shown amongst motor cyclists and friends in Edinburgh and district.

North-west London M.C.C.

On Friday last Mr. Harold Karslake delivered a most interesting lecture to about thirty-five members at headquarters. The lecture was entitled "Competition Riding," but Mr. Karslake confined his remarks almost entirely to the preparation for competitions, dividing into heads as follows: Reliability trials, non-stop trials, petrol consumption, and hill-climbs. Many useful hints and tips were gathered, and a short discussion followed the lecture.

A breakdown competition occupied the remainder of the evening, this being in the capable hands of Mr. Karslake and Mr. Fisher (the well-known agent of Hampstead), who provided a 2½ h.p. Grandex lightweight with J.A.P. a.i.v. engine. The selection was a happy one, as the machine was quite strange to all the competitors, and came in for much admiration from the company afterwards.

The winner was found in F. Thomas, who located and repaired the trouble and started the engine in 3 mins. 50 secs. A. J. Dreydel came next in merit, having just completed the re-adjustment in the 4 mins. maximum time. No other competitor succeeded in restarting the engine in the allotted time, though many were well on the way to a solution when time was called.

STABILITY.

"IXION" naively asks in *The Motor Cycle* of January 26th, "Why ever should a lower saddle position *per se* tend to decrease the factor of stability on greasy roads?" I don't fancy "Ixion" is as ignorant as he would have one think; he is cute enough to put his remark as a question instead of a positive assertion, anyway. But if "Ixion" really wants an answer, let him take a billiard cue, or even a domestic broom, and try balancing it first light end up and then the other way. He will see at once that the higher the weight (or more properly the centre of gravity) is placed the easier it is to maintain the cue or broom in its upright position.

It is just the same with the bicycle; the higher the saddle position, the higher the rider is carried, and the centre of gravity being raised, the balance is less liable to be upset. It was just because the rider was so high up on the old tall bicycle that that type of machine was so free from side-slip. Of course, it had little propensities of its own, which, on the principle of *de mortuis nil nisi bonum*, need not be stated more bluntly than in the terms adopted by a recent lecturer. He referred to "The early cycle with a direct drive to a wheel of large diameter and having but small longitudinal stability!"

Because a car with a low centre of gravity is less liable to turn over than a high one, many people think a low motor bicycle has the advantage in stability over others. They forget that, while a car has a wheelbase or area affording positive support laterally of the centre of gravity, the bicycle is maintained in unstable equilibrium by balancing, which makes all the difference. One thing that incidentally lowers the centre of gravity may be beneficial, but not for that reaso When a motor cyclist indulges in a side-slip he m be interested to know that in performing the evoluti which so entertains the bystanders, machine and rid describe a curve round the centre of gravity.

Now if "Ixion" will take two dumbells of equ weight, but one having a long bar and the other short one, and grasp each at the middle of the ba he will find that he can twist the wrist of the ha holding the short barred bell much easier than can the other. The same applies to the motor bicycl if the motor is set low its weight is carried at a co paratively long distance from the centre of gravity, a the machine is less liable to slip up than if the engi were arranged higher up, because it would then closer to the centre of gravity.

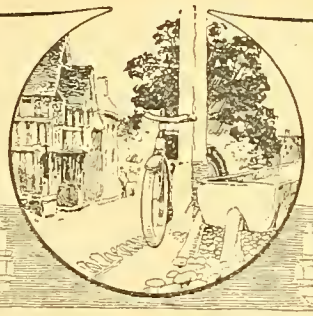
It is a sort of converse of flywheel effect. If t heavy rimmed flywheels of equal weight but of differe diameters are rotated at the same speed, the larger c will be more effective than the other; it will mod disturbances tending to make the speed of the sh irregular better than the smaller wheel; in short, will be more difficult to stop. But, at the same tim this larger wheel will be more difficult to start. So say, the top tube is regarded as the shaft and the ri and machine as the flywheel, the further the hea motor is put from the shaft the more difficult it will for the disturbing influences to set the hum mechanical flywheel rotating.

So far as that is concerned, the benefit could obtained by fixing the engine the same distance ab the top tube; in fact, more, for the mere balanc would be facilitated.

G. D. LEECHMAN

A contrast not unfavourable to the motor cycle. Steep hills have no terrors for the modern motor cyclist.

Fads & Fancies on the Quarterly Trial Machines.



AS might have been expected, a good many machines in the Quarterly Trials were specially fitted up in various ways, but these were either numerically so many nor was the assortment so varied as in the London-Exeter run. The accompanying sketches indicate some of the principal fittings that we noticed. It will be interesting in later years perhaps to turn back to illustrated notes such as this and see whether the use of such details has any permanent bearing on the design of the machine, for that these arrangements

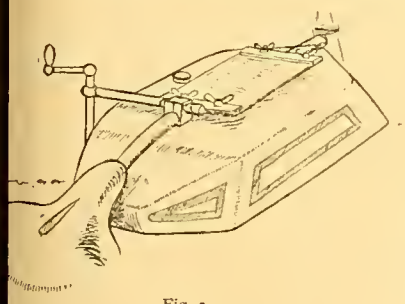


Fig. 1.

the necessary argues that very few present day mounts are sent out from the factory adequately equipped even for a century run in our variable climate.

A Three Gallon Tank.

Fig. 1 is a view of the gargantuan petrol tank fitted to a Lincoln Elk machine. The rider expected to run out and home on one filling, and well he

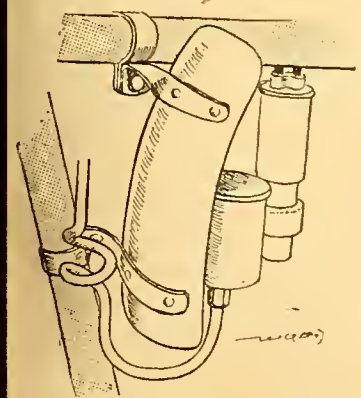


Fig. 2.

might do so, for the tank's capacity was no less than three gallons.

Fig. 2 represents a very neat little aluminium mudguard, fitted behind the carburetter on the 2¼ h.p. New Hudson machines. This adequately prevented any mud or dust getting thrown on to the float chamber, or adjacent to the air

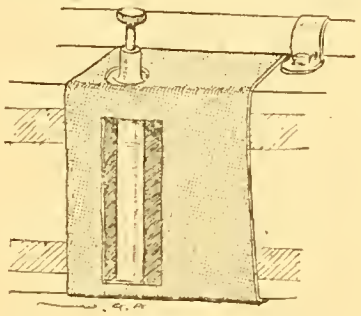


Fig. 3.

ports, and should have a beneficial effect on engine wear, for, as is well-known, a really appreciable quantity of grit is frequently drawn with the gas into the cylinder.

G. Gray's (No. 27) Triumph was provided with a chamois leather knee grip as indicated in fig. 3. This had a hole cut out of the top so as not to obstruct a view of the petrol level.

Double Sparking Plugs.

Burney's Rudge-Whitworth was equipped with two sparking plugs controlled by a throw-over switch, the latter being of the ordinary low-tension pattern, but being nearly all screws, it is likely to convey shocks unless well covered with insulating tape. The idea was illustrated last week

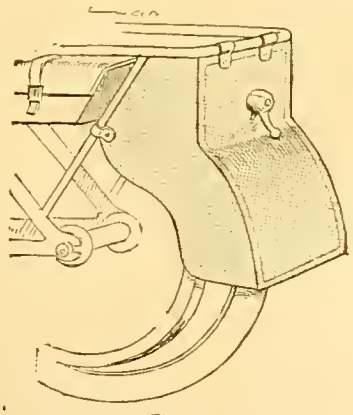


Fig. 4.

(page 121). The same machine had also a most sensible rear mudguard (fig. 4), which is detachable for tyre inspection or repair.

The only Red Indian in the trial was furnished with an extra torpedo-type petrol tank (fig. 5) connected up direct to the main tank. The extra tank appeared to have been made out of an oil tin, but was painted red to match the machine, and really looked quite well. Behind this tank was a neat little tool box, the lid of which served as a table for the route card.

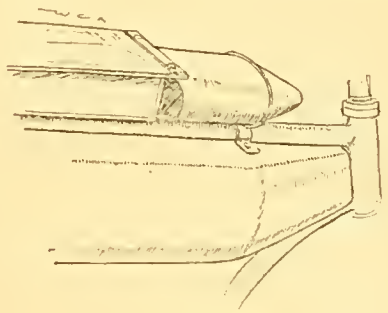


Fig. 5.

A. J. Luce's twin Bat was fitted with the monstrous mudflap shown in fig. 6. This, in conjunction with the effective

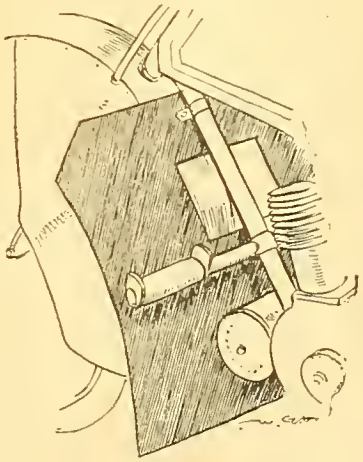


Fig. 6.

front wheel guard should keep the rider clean in any weather. It will be noticed that a sensible sized hole is cut in the flap to allow a draught to impinge on the cylinder heads.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Advantages of a Two-Speed Gear.

Assuming that I purchase (second-hand) a standard pattern Triumph motor cycle for use with a sidecar, if I fit it with the 1911 pattern Millennium two-speed gear, will this give me two speeds, free engine, and handle starting, and will it be suitable for sidecar work on ordinary roads?—A.O.C.

The fitting of the two-speed gear will give all the advantages suggested in your letter except that of handle starting, but what is equally good, it allows you to start the engine by means of the pedals when the gear is in neutral. This is quicker and as good as any system of starting.

A Cracked Exhaust Valve Seating.

I have discovered a minute crack in the exhaust valve seating of one of the cylinders of my 1909 pattern 7 h.p. V.S.-Peugeot twin. Will you kindly inform me (a) if this can be mended, also (b) will it affect the running, and (c) is there need to have it remedied at once, or will it be safe to run the machine as it is?—G.G.

Unless the machine is losing power you had better not worry. It may last some considerable time; on the other hand, the crack may extend on any ride. (a.) Unfortunately, the crack is in such a position that it cannot be repaired. (b.) If, eventually, the crack gets larger and compression is lost, we fear that the only remedy is a new cylinder.

Engine Improvements.

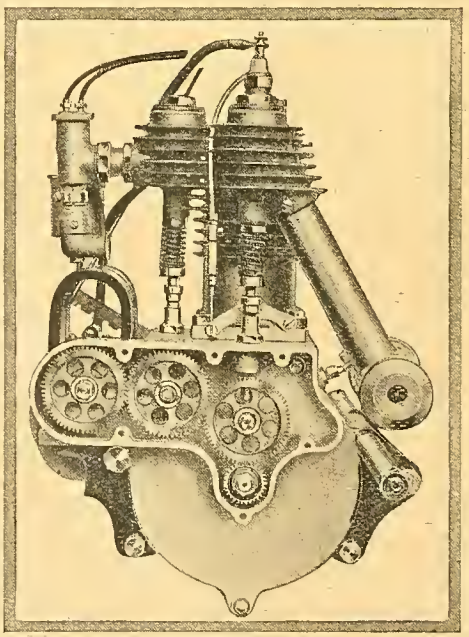
I have seen it stated in *The Motor Cycle* recently that engines for 1911 of the same size as 1910 engines are about five miles per hour faster. I have a 1910 engine, and should like very much to know how this result has been obtained.—J.T.

The result has been obtained by a combination of improvements. If it is your idea to embody the improvements in your 1910 engine this may be impossible, as such alterations as lighter pistons and heavier flywheels enter into the question. We cannot tell you actually how the results referred to were obtained—it is simply a question of continual experiment. Alteration in the compression, timing, setting of the valves, etc., would produce these results, to say nothing of alteration to the design of the cams, etc.

Removing a Timing Wheel.

Will you kindly inform me on the following: (1.) How do you take the half-time wheel off the shaft of a 1910 Bradbury? I want to strip the flywheels to take the connecting rod out. I have tried all ways, but find it impossible to move the screw. (2.) I have fitted an exhaust whistle, but cannot make it answer. It makes a slight noise, but no whistle. Can you tell me the likely cause?—S.S.

(1.) To get the wheel off the screw must be removed somehow, and if it cannot be removed in the ordinary way you had better drill it out. Then get two levers at the back of the timing wheel, one at the top and the other at the bottom, and prise it off. If it is very tightly fixed considerable force may be required. (2.) The trouble may be due to the fact that the particular whistle you have is not suitable for the pressure of the exhaust gases of your engine.



THE QUADRANT POWER UNIT, showing peculiar disposition of the valves and the simple gear drive for cam wheels and magneto. The exhaust valve is at the side and inlet valve at the rear. A clean crank case has always been a good point of the Quadrant.

Valve Timing.

The big end of my 3½ h.p. single-cylinder engine having seized I had a new bush fitted and since then my engine will not climb hills. I have timed it so that it fires (when retarded) just as the piston is turning over the top of firing stroke. The exhaust valve I think closes too soon as it opens when the piston is at the bottom and remains open until the piston gets about two-thirds way up. Nearly on the top the valve is on its seating. Should not the valve be open when the piston gets to the top?—R.

You should set the valve so that it is closed by the time the piston reaches the top of the stroke. You may try your engine with the valve timed a trifle later. It would be worth trying. The trouble may be that the new bush is rather too tight a fit and retards the engine. This will be a point worth verifying.

Reboring Cylinders.

I am at present in trouble with my 3½ h.p. F.N. engine. It used to run very reliably but without much power. I examined cylinder and found it badly scored, and also that piston was too loose a fit. I got cylinder rebored and new piston and rings fitted, but found when I open the throttle the least bit it responds for a few seconds and then a strange bouncing noise takes place in engine and in a few yards the machine stops (the engine gets rather hot). I have an idea that the oil is not getting on to the cylinder walls very well owing to a sort of tin covering the top of crank case with just a few holes in it to let oil pass (I am giving it lots of oil). The engine seems to labour considerably. I would be greatly obliged if you could advise me in the matter.—J.Y.C.

It looks as if the piston is rather a tight fit in the cylinder. What you had better do is to dismount the engine and again examine the interior of the cylinder and see if this is really the case, but, before taking any serious steps, it would be as well to remove the baffle plate and see that some oil reaches the cylinder. It is probable you will find the gudgeon pin loose. Reboring is a job which requires great care, and should only be trusted to first-class repairers.

Sluggish Starting. Free Engine Clutch.

My magneto motor cycle—a twin Rex—is rather difficult to start after standing a little time. The gear is about 3¼ to 1. Would water-cooled oil be more serviceable, or would bad results attend the use of it? Could you please give me the benefit of your experience of different makes of clutches?—P.E.J.

You had better be content with an air-cooled oil, although an admixture of 50% water-cooled oil would be a good experiment. By far the best plan is to inject paraffin or petrol if the engine is difficult to start. The adjustment of the carburetter is also important. If no choke tube is fitted to your carburetter, we should recommend you to fit one during the cold weather. This would render starting easier. As regards the clutch, we should recommend you to fit the clutch made by the makers of your machine.

Retiming Engine. A Charging Query.

Kindly say regarding retiming of my Motosacoche engine—(1.) In what position should the piston be in the cylinder when the spark is fully advanced? (2.) About how long should it take to charge an exhausted twenty hours accumulator off a single 100 volts 16 c.p. lamp with one of Gamage's adapters, *i.e.*, the lamp alight and the accumulator being on the single lamp circuit? (3.) Is gas engine oil suitable for this engine?—A.L.

With the piston dead on top of compression stroke, and the ignition lever fully retarded the platinum points should be just about to break. If you know this rule you can arrive at the position of the piston when the spark is fully advanced by advancing the ignition lever to the fullest extent and then noting where the points break. You measure the position of the piston through the sparking plug or compression tap holes. (2.) It is somewhat doubtful if you could get an exhausted accumulator to charge at all with only half an ampère passing, which is the amount that would be passed by a single 100 volt 16 c.p. lamp. It is usual to charge an accumulator battery of this size at about two ampères. Theoretically, the time taken to charge should be forty hours, but an adapter such as you mention is never used for charging up from zero, only for freshening up a battery which has been discharged to, say, 3.6 volts. (3.) Gas engine oil is not suitable for your engine, nor is it wise to use any kinds of doubtful lubricant. It pays to buy the best.

Choice of a Sidecar.

I should be glad if you would give me your advice as to the choice of a sidecar attachment between a rigid or a castor wheel. Is a castor wheel as free from sideslip as a rigid? Also, which is the best for steering in traffic and taking corners? Up to the present I have never driven a sidecar, and feel somewhat nervous, as it appears to me that there is a great risk in taking corners with a rigid pattern.—B.A.J.

There is no doubt that the rigid type of sidecar is the most effective against sideslip, and it would steer almost as well as any other type. However, for taking corners probably the castor wheel sidecar might be a little better. Naturally when a corner is taken at a high speed with a rigid sidecar there is a risk of overturning, especially so when there is no passenger, but if the corners are taken at a reasonable speed there is no danger whatever.

Meaning of Synchronised Ignition.

Please explain to me what is meant by "synchronised ignition." I have seen the expression several times lately in *The Motor Cycle*. As it seems an important adjustment, I should be glad to know how to ascertain if the ignition of my twin-cylinder Lagonda tricar is synchronised.—A.L.L.S.

Synchronised ignition means that the sparks at the plugs of a twin, or other multi-cylinder engine, take place at exactly the same time relative to the position of the piston in the cylinder. In the case of battery ignited engines using a trembler coil and make and break or wipe contact maker, it is quite possible for the spark to occur earlier in one cylinder than it does in the other, either through bad adjustment of the contact breaker or the trembler screw on the coil. The usual method employed for synchronising the ignition on a twin-cylinder V-type engine is to run each cylinder separately, shorting one cylinder while the other is running. The slowest cylinder can then be tuned up to the fastest.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"Simplicitas." 1911 T.A.C.

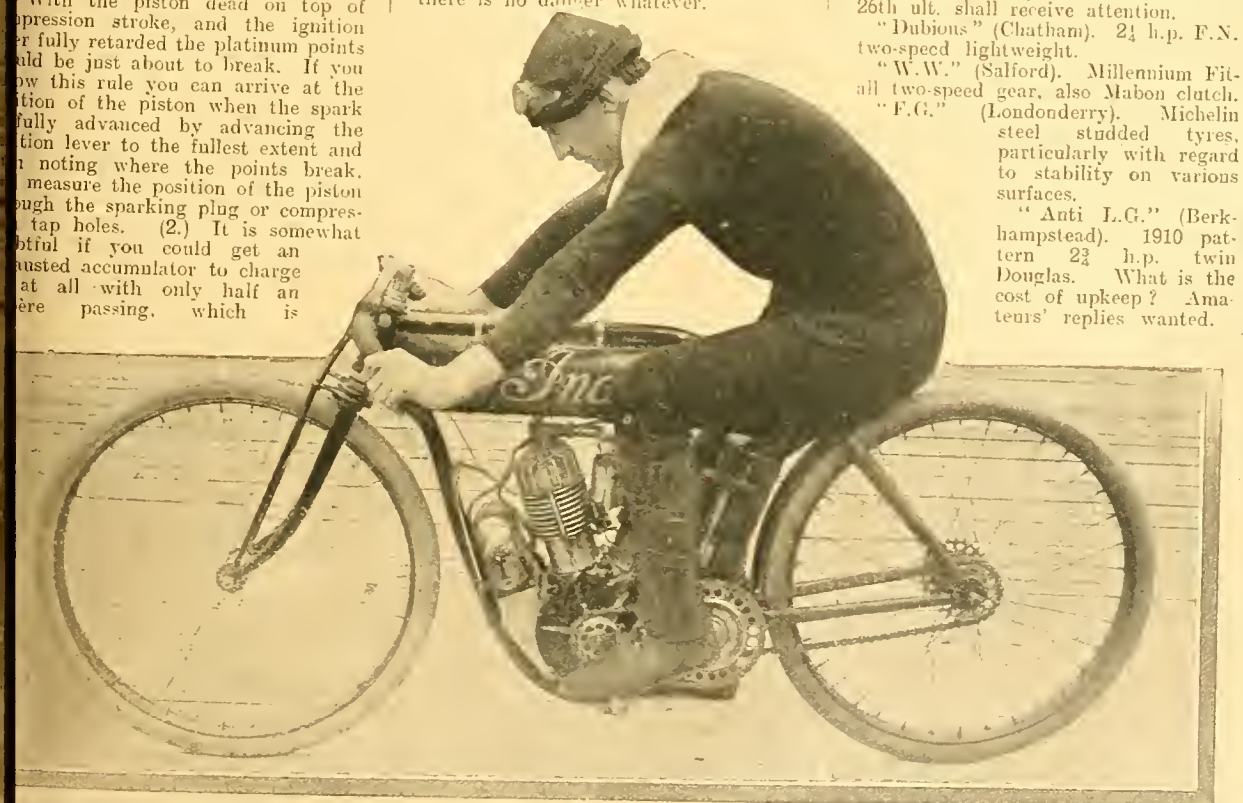
If "Undecided" will send his name and address and a stamped and addressed envelope his letter of the 26th ult. shall receive attention.

"Dubious" (Chatham). 2¼ h.p. F.N. two-speed lightweight.

"W.W." (Salford). Millennium Fitall two-speed gear, also Mabon clutch.

"F.G." (Londonderry). Michelin steel studded tyres, particularly with regard to stability on various surfaces.

"Anti L.G." (Berkhampstead). 1910 pattern 2¾ h.p. twin Douglas. What is the cost of upkeep? Amateurs' replies wanted.



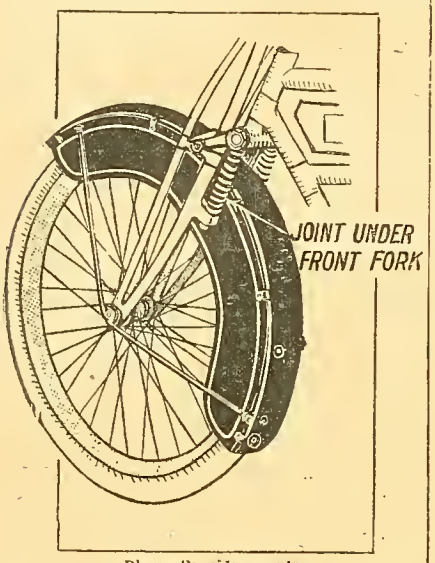
Jacob De Rosier,, the leading rider for the Hendee Mfg. Co., mounted on a twin-cylinder Indian. Mr. Oscar Hedstrom recently told our New York correspondent that he has some new twin-cylinder engines in course of construction for the Tourist Trophy Race, and unless something unforeseen occurred, De Rosier would come to England this year. This is the rider who is credited with covering 79⅞ miles in an hour.

The Warner Speedometer.

The Electric and Ordnance Accessories Co., Ltd., Birmingham, inform us that at present they are unable to supply the Warner speedometer with "snail" gear transmission illustrated in the issue of January 12th.

Detachable Side Mudguards.

The success of many of the mudguarding devices used in the Winter Trials has induced manufacturers of accessories to turn their attention to the sale of suitable articles of this nature. The latest to reach us is from C. W. Bluemel and Bros., Wolston, near Coventry, whose detachable side

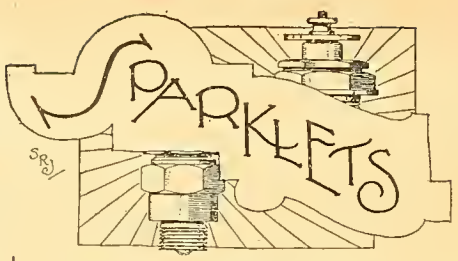


Bluemel's side guards.

mudguards for motor cycle front wheels have been provisionally patented. Ease of attachment and detachment is important, not only because it makes these guards suitable for almost any type of motor cycle, but also because they can be quickly removed for cleaning purposes. They are fastened to the beaded edges of the mudguards by means of spring clips which are sprung on to the bead, they are then further tightened by means of screws so as to be quite secure. The guards are not in one piece, but in pairs for the lower and upper parts of the wheel as illustrated above. If too long, they can easily be reduced slightly by cutting away the end of the shield near the front forks, *i.e.*, at the joint. It may also be necessary to cut away a small piece from the beaded edge of the side guards in order to clip the mudguard stays. The price of a complete set is very reasonable, and made in thin sheet steel, and enamelled to suit the machine, they do not detract from its appearance.

Belts in Canada.

Messrs. O. and W. Ormerod, Rochdale, the makers of Watawata belting, have received an advice from their Toronto agents, Messrs. the Tangent Cycle Co., that they have given instructions that all motor cycles sent out to them from this side are to be fitted with this popular leather belt.



Motor Cycle Insurance Policies.

The premium for the P.B. Dreadnought policy for motor cycles of any horse-power has been further reduced. P.B. stands for Percy Butler and Co., 65, King Street, Manchester, from whom full particulars can be obtained.

Catalogues Received.

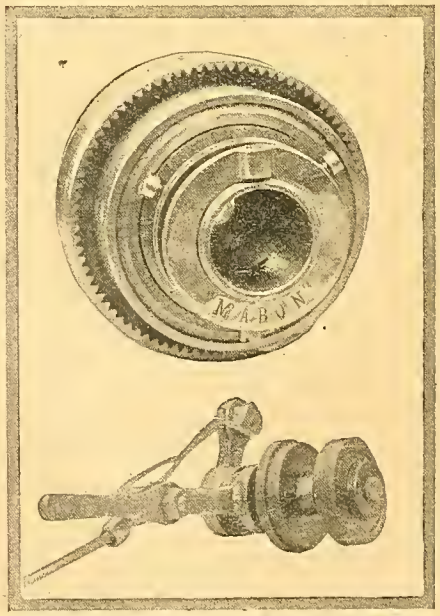
The new Rudge motor bicycles are fully illustrated and described in the Cyclists' Encyclopædia, which is the title of the catalogue of Rudge-Whitworth cycles and motor cycles. It is sent post free to all who apply to Rudge-Whitworth, Ltd., Coventry.

We are in receipt of the latest catalogue of Messrs. Fuller and Sons, Wick Lane, Bow, E. In it are listed the well-known Fuller dry cells and the Fuller charging battery. The latter is a well-tried article, and has been on the market for some time.

Another catalogue is that of the Juno motor cycles and accessories from the Metropolitan Machinists Co., Ltd., 248-250, Bishopsgate, E.C.

Motor Cyclists' Clothing.

The Para Rubber Co., John Bright Street, Birmingham, are putting a silk waterproof cap cover on the market. This can be carried in the waistcoat pocket and stretched over a tweed cap when required, keeping the latter dry in wet weather and obviating to some extent the necessity of carrying a sou'-wester. The same firm are also making

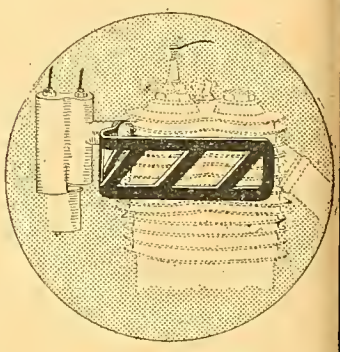


Showing the latest pattern Mabon clutch with adjustable pulley, together with the new operating mechanism.

up coloured oilskins, yellow, green, brown, and black, and have a new treble-breasted tweed-lined coat.

A Neat Trouser Guard.

Mr. J. B. Dall, Ladybank, Fife, has just applied for a patent for a trouser guard which will fit most 3½ h.p. single-cylinder machines. The pattern illustrated is made specially for Triumphs, and is easily fitted by removing the carburetter and the copper washer which lies next to the inlet port. The guard is about the thickness of the washer, and takes its place. Other patterns are made to suit Amac and B. and B. carburetters. It is claimed that the guard entirely prevents



Dall's trouser protector.

trousers or overalls from being scorched against the hot combustion head—a frequent trouble when the feet are resting on the footrests.

A Projected New Company.

The Roc Gear Co. is the title of a new concern which may shortly be established to deal solely with the gear department of A. W. Wall, Ltd., Birmingham. Contrary to the belief which appears to exist in certain minds, their tricycle runabout is not in competition with the 4 h.p. single-cylinder and 5-6 h.p. twin-cylinder Roc motor bicycles with two-speed gear, which can still be supplied at short notice.

Exchanges at your own Door.

Mr. R. G. Nye, 69, Leather Lane, E.C., has made arrangements to visit, on a motor cycle, intending purchasers of new or second-hand machines and those requiring to effect the exchange of their present mount within a range of sixty miles round London free of any charge. The machines which Mr. Nye will use for this purpose will be two Nye motor bicycles fitted with J.A.P. and Precision engines respectively. The chief object of the scheme is to relieve motor cyclists of the trouble and expense of sending their mounts up to town for valuation.

Messrs. Nye and Co. will offer twelve gold medals to the twelve private owners of twelve motor cycle clubs who put up the best performance in open hill climbs during the year. The decision of the awards is to be left exclusively to the various club committees. Secretaries are invited to apply and send particulars of their clubs' events.

THE MOTOR CYCLE

Vol. 9. No. 412. Feb. 16th, 1911.

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

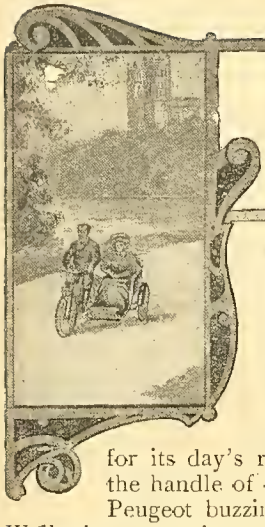
Motor Cycle Taxation.

IN the issue of February 2nd we called attention to the resolutions agreed to by the conference which met to discuss the inequalities and injustices of the existing taxation of motor cars and motor cycles. If the committees of the R.A.C., A.A., and M.U., decide to adopt these resolutions without alteration we think they will be doing motor cyclists a certain amount of injustice. The fourth resolution certainly ought to apply to motor bicycles as well as to cars. The wording of No. 4 is "That it be sought to obtain a reduction of, say, 50 per cent. in respect of cars four years old and over." No. 5, already quoted, is "That in respect of motor cycles and motor attachments of not more than 2 h.p. there should be a tax of 10s. per machine." Now the present tax for the smallest cars is two guineas, and that for any motor bicycle is one pound. Anyone will readily see that if resolution 4 passes the committees, the Chancellor will be asked to tax small cars only one shilling more than motor cycles of over 2 h.p. It is all very well for the committees to say in their recommendations that the proposed reduction in regard to motor cycles under 2 h.p. will represent a reasonable concession to the poorer users; doubtless in passing this resolution the conference thought it was doing its best in the interests of motor cyclists, but it should have known that the poorer motor cyclists ride machines of over 2 h.p. in much the same proportion as they ride those of under 2 h.p. Mercifully we have been spared from formulæ in connection with motor cycle taxation, therefore why introduce it?

However, the points we wish particularly to emphasise are that the 50 per cent. reduction it is sought to obtain in the case of cars four years old should apply equally to motor cycles of the same age, and that the 2 horse-power definition is not high enough. The 10s. tax would be ample for new motor cycles up to, say, 500 c.c.

"The Motor Cycle" Buyers' Guide of November 10th shows that there are only about ten makes of motor cycles fitted with engines of 2 h.p. and under, and there are over 75 other makes exceeding 2 h.p.

Without casting any reflection upon the representatives of the R.A.C., M.U., and A.A., who formed the conference, we consider motor cyclists' interests would have been better served if representatives of the A.C.U. had been asked to form a section of the conference instead of leaving the motor cyclists' case in the hands of the R.A.C. Members of the A.C.U. who are thoroughly in touch with the motor cycle movement could have explained to those members of the conference who are not so completely *au fait* with motor cycle matters the inadequacy of their proposals. It is not too late now to make alterations to the resolutions, as they have all to be confirmed by the executives of the R.A.C. and M.U. and A.A., and we still hope that the motor cyclists' case will be more strongly advocated in the resolutions it is proposed to place before Mr. Lloyd George. We have repeatedly argued that the maximum tax on motor cycles should never have exceeded the amount paid on a two-wheeled horse-drawn vehicle, which is 15s. We base our contention on the amount of damage done to roads by iron-shod wheels and iron hoofs compared with pneumatic-tyred wheels, when even the 15s. tax appears excessive. But to place new two-wheeled motor cycles weighing a hundredweight on the same footing as second-hand cars of 6 or 7 cwts. is surely unjust.



A Memorable Afternoon's Ride.

By B. RICHARDSON BILLINGS.

IT was a gloriously fine autumn day, sunny, cloudless, and warm, and there were we buried away in a little Hampshire village, pining for the sea, miles away. True, there was the sidecar, ready, as usual, for its day's round. If only we could turn the handle of our Roc gear and set that twin Peugeot buzzing towards the coast. . . . Well, the temptation was too great; at eleven o'clock neither I, nor my passenger, nor indeed "Poor Joe" (the motor) himself, was ready for the ride in the remotest degree, yet by noon we had packed our necessaries and were on the way. There is something nice about the modern motor cycle, like the fire engine, it is ever ready for a sudden turn-out. Our combination got no more attention than a casual glance at petrol and oil gauges, and another, even more casual, at tyres, belts and nuts, before we headed for Petersfield, on the main Portsmouth road, and put our noses towards Butser Hill. The going was good to Horndean, whence we made for the old town of Chichester. One would judge from the map that the way from Chichester to Bognor was quite easy, but we found the way out of the cathedral city intricate and badly sign-posted.

A Penetrating Pin.

At Bognor, after sending off an unlucky telegram of thirteen words to book rooms, I found the back tyre flat. Further search revealed a stray pin introduced vertically and for its entire length into my driving cover. Removal of the intruder and repair caused fifteen minutes' delay—the first of its sort for six or seven months, thanks to my Bates's tyres.

In my limited experience of these matters I think pins make the most irritating punctures, because a pin will perforate the thickest and best tube in four or five places may-hap, and the chances are that your repair patch will miss one of these invisible holes. So it was in my case. After pumping up the tyre hard we went on our way rejoicing until an ominous bump told me that the rim was hitting the ground. I decided to join that class which takes the most pains and re-pump. Every ten minutes after that did I re-pump the tyre, and as we were on the road till midnight I have calculated that I gave six times ten times forty strokes, and that it took about 2½ hours of our time. My pectorals next morning confirmed the fact!

The start.
A typical Hampshire village.

The Sussex roads were horrible—at all events, those we traversed—winding, twisting, and bumpy; at some of the corners the appearance was as if a cart load of stones had been scattered broadcast. To add insult to injury, we had to pay a shilling in toll money (at Littlehampton and Shoreham) for using these vile tracks. Between Worthing and Hove I really thought our back rim would be dented irreparably, and the beauties of the tramlined road are not enhanced by the numerous motor 'buses, vans, and traction engines of this commercial region.

Brighton to Hastings.

We were glad, then, to reach the magnificent sea-front of Brighton and ride in comfort once more. After tea we went inland to Lewes, and were thankful to follow wide and smooth tarred roads. Petrol was dearer in Lewes than elsewhere—(Why does the price vary so at different places on the same day?)—and after this we had an evening ride to Polegate and Hastings.

This seemed a long stretch; the absence of the sun and the rising mists contrasted gloomily with the brightness of the first part of the day. At Ninfield, while inflating for about the fortieth time, a jolly old countryman directed us on our way, and after commenting on the vagaries of motor tyres alluded to his own sad case, for he found he was getting short of breath lately. He was very much impressed with our boldness in trying to reach Folkestone that evening.

Leaving him behind in the dark we got forward till we saw the welcome lights—and unwelcome trams—of Hastings. Luck seemed against our getting out of this town, at all events with despatch. It was about nine o'clock, and most of the hard-worked shopkeepers had retired for the night, including the garage folk. If a garage *were* open it did not sell the particular brand of oil or carbide we preferred. We resorted to the oft-tried advice and asked a policeman. He knew of no garage, but there was a motor shop up Ore way (subtle difference). Thither we repaired, and, of course, it was shut—(Does Hastings spend all its time in bed?)—but, joy of joys, the proprietor chanced to be hard by, and on his neck we fell, for we were in dire want of lubricant.

Once more on our way, by the time we reached Winchelsea we were going through a thick, damp fog, and glad was I to have remembered the hill and arch there, for it might have meant an accident under those conditions had I been a stranger to the

A Memorable Afternoon's Ride.—

road. Ten miles an hour was all we could hope for when going, and this average was still further lowered by that wretched leaking puncture, all hopes of repair vanishing after darkness and fog had set in. We dodged the toll-gate at Rye, since it was left open, and soon after had two narrow escapes from running into walls or signposts in the fog. Between Dymchurch and Hythe the fog was at its thickest, and the only vehicle that met us was another dismal side-car puffing on its solitary way blindly through the midnight gloom.

Hythe and Sandgate were clearer, and the motor seemed glad of a little rope to show how well it could pull us all up the hill into Folkestone. Here we were, then, at our intended destination, with everybody in bed and a flat tyre.

Another friendly "bobby" (they can be friendly to motor cyclists sometimes) told us of a place where we could stable the motor, and after that we soon found a haven of rest for ourselves. No sooner was my head on the pillow than I was dreaming of the Portsmouth to Folkestone record that I had broken—about 120 miles in 12 hours!

Next day, having eased my mind by covering over that elusive pinhole of the day before, I was able to partake of some of the seaside pleasures midst brilliant sunshine. The following morning, being Thursday, was devoted to a perusal of *The Motor Cycle* while basking on the beach, now and then sparing a glance for the disporting bathers—mixed. Friday was rather dull to begin with, or else I think we might have been tempted to start our homeward ride.

Saturday, however, saw us on our way back, reluctant to leave the sunny sea, and this time we took good care to leave it and not follow the coast. Our journey was over some of the best made roads of Kent, for we kept to the main London road right up to Malling, where we turned left for Sevenoaks, and so on through Redhill, Reigate, Dorking (sooted plug changed here) to Guildford, and here we again joined the main London-Portsmouth road. The Surrey roads are hilly, but, nevertheless, preferable to the flat, winding, loose-surface tracks of the Sussex coast, and in spite of the hills and two mile low gear grind up the Hindhead we doubled our outward average. Yet to those who live near any of the places mentioned I can thoroughly recommend this circuit for a pleasant week-end ride, with one piece of advice: If your tyre should go down, see to it there and then—you'll save time.

(1.) Hastings sea front. (2.) At Dymchurch. (3.) The winding road to Dymchurch.

M.C.C. PROGRAMME FOR 1911.

THE programme of principal fixtures of the Motor Cycling Club during 1911 is as undernoted. The hill-climbs and brake tests in Devonshire next August are quite a new departure.

April 1st.—Opening run to Brighton.

April 14th-17th.—Easter tour.

April 14th-17th.—London-Land's End-London Trial for valuable cup, presented by the President, open to motor bicycles only. Gold medals for all meritorious performances.

May 13th.—Members' hill-climb.

May 27th.—"Albert Brown" Trophy Trial for cars.

June 2nd-3rd.—London to Edinburgh twenty-four for special return journey gold medal. Open to all to all types of motor cycles and cars driven by members.

June 2nd, 3rd, 5th.—London-Edinburgh-London for special return journey, gold medal. Open to all types of motor cycles and cars driven by members.

June 2nd, 3rd, 5th.—London-Edinburgh-London for Motor Cycling Club Challenge Cup (to be won three times). Open to motor bicycles only.

June 17th.—Inter-team trial for *The Motor Cycle* Challenge Cup. For teams of six riders from recognised clubs. Motor cycles only.

July 1st.—100 miles non-stop run for silver medals. Open to all types of motor cycles and cars driven by members.

July 8th.—Brooklands. Programme later.

July 15th.—Petrol consumption trial.

August 5th-7th.—Hill-climbs and brake tests in Devonshire.

September 2nd.—Members' hill-climb.

September 30th.—Speed judging competition.

October 29th.—Closing run.

December 26th-27th.—London - Exeter - London twenty-four hours' trial.

MY IDEAL MOTOR CYCLE.

By R. RÜDE.

An ambitious yet simple design of four-cylinder V-type two-stroke engine with scavenging device.

SOME years ago I tried to solve the weight question, and set myself the difficult task of finding how the weight of the petrol engine could be reduced. What we would all like would be a machine as powerful as a 3½ h.p., weighing 100 lbs. to 120 lbs., and yet as smooth running and noiseless as the four-cylinder F.N.

To build a lighter machine the weight of the engine should be reduced. Now a twin-cylinder engine of

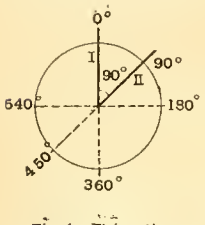


Fig. 1—Firing diagram of a two cylinder V-type four stroke engine at 90° with single crank.

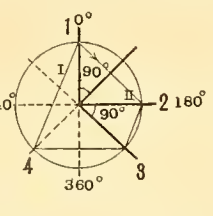


Fig. 2—Four cylinders V-type, four stroke at 90° with double cranks at 180°.

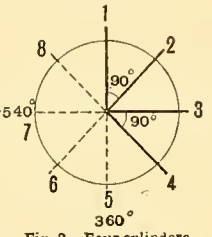


Fig. 3—Four cylinders V-type, two stroke at 90° with cranks at 180°.

2 to 3 h.p. with enclosed flywheels will weigh about 40 to 45 lbs. against the 3½ h.p. single of 56 to 60 lbs., and there is at least 20 lbs. of dead weight in the rims of the flywheels in the case of the single-cylinder and 15 lbs. in the twin, whereas if an outside flywheel is employed there is not more than 6 lbs. dead weight in the rim for the required flywheel effect.

Can this dead weight be eliminated? To solve this problem we have to consider the function of the flywheel. Therein is stored a certain amount of kinetic energy which is given out as soon as the speed of the revolutions drops. The larger and heavier the flywheel, the greater the flywheel effect at a given speed.

Uneven Firing.

The light V twin with outside flywheel seemed to me for a long while a good step forward in the direction of the ideal. Why I finally abandoned it will soon be clear. I designed a twin-cylinder of 65 mm. by 75 mm. bore and stroke, 500 c.c. capacity, to give 4 h.p., the cylinders being spaced at an angle of 90°, which led to the engine being hung in the frame as shown in the illustration of the complete machine (see next page). However, I found an objection to this design, and that was uneven firing which takes place at 0° — (360° + 90°) — 720°. (See fig. 1.)

Next came a four-cylinder V engine with small cylinders of 54 by 56 mm. of the same output, but I was still troubled with uneven firing. To render this question of uneven firing clear to all, I append diagrams fig. 1 and fig. 2, which should help considerably.

The circle represents two revolutions, *i.e.*, 720°, and the best way to understand the cycle of operations is to keep the following facts in mind:

(1.) The angle of the cylinders is always represented in the diagram.

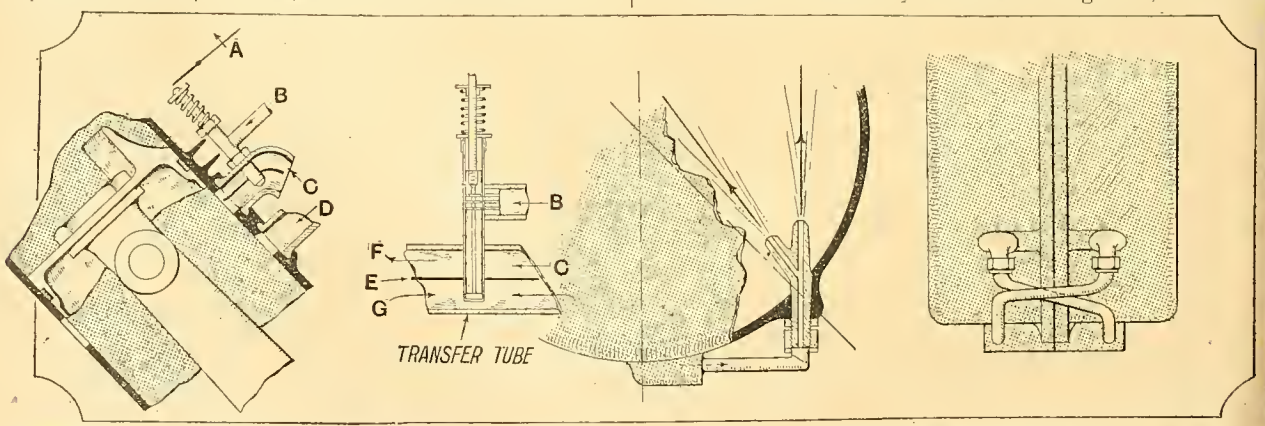
(2.) The crank throw is also shown.

(3.) Explosions may occur at 0° or 360°, *i.e.*, I can turn the crank through 360° (a complete circle), firing either at 0° or 360°, at 90° or 450°.

Fig. 1 shows a V twin-cylinder, where firing takes place at 0° — (360° + 90°) — 720°.

Fig. 2 shows a four-cylinder double V type with cylinders at an angle of 90° and having a double crank at 180°. Uneven firing takes place here also, the firing points being at 0° — 180° — 270° — 450° — 720°.

Fig. 3 shows another possibility, viz., if we alter the diagram to that of a two-stroke engine there are now four even explosions during one revolution, each at 90° apart. The torque is then equal to that of an eight-cylinder four-stroke engine, where only one-sixty-seventh of the flywheel effect of a single-cylinder is required. In this manner the dead weight of the big flywheels is practically eliminated. Ignition provides no difficulties in these days of reliable magnetos, and I will



Figs. 6 and 7—Automatic lubrication system fitted to the author's "Ideal" two-stroke engine.

ARRANGEMENT OF INLET & SCAVENGING PIPES (see next page).

Fig. 4—Enlarged section of top of cylinder and piston.

A. Petrol piston control from handle-bar.
B. Petrol inlet.
C. Scavenging charge from crank case.
D. Pure air inlet from blower.

Fig. 5—Enlarged section of petrol piston, jet, etc.

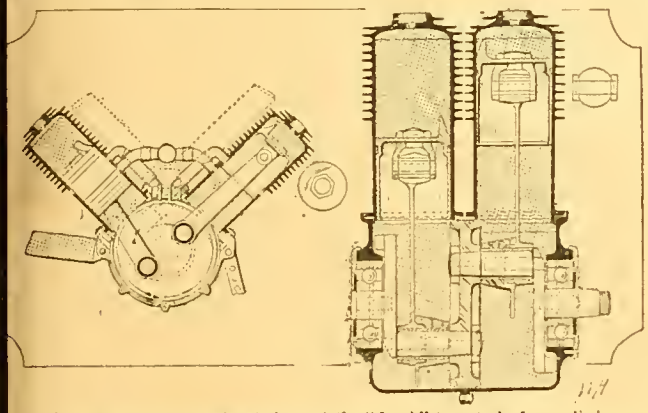
B. Petrol inlet.
C. Scavenging charge from crank case.
E. Partition in inlet port.
F. Scavenging charge entering cylinder.
G. Carburetted air entering cylinder.

now pass on and describe some of the advantages possessed by such a tiny two-stroke engine.

There are no valves or gear wheels, the piston and deflecter performing the duties of the valves by covering and opening suitably arranged slots in the cylinder

My Ideal Motor Cycle.—

walls. The crank case is a clean casting, about 5in. diameter and quite symmetrical. The total weight of the engine, giving 4 to 6 h.p. at 1,500 to 2,000 r.p.m., should not exceed 25 lbs., and when mounted in a light strong frame should form an ideal mount for solo or passenger work.



Figs. 8 and 9—Part sectional views of the "Ideal" two-stroke four cylinder engine showing pistons, connecting rods, crankshafts, central flywheel, transfer pipes, etc.

Before describing my engine in detail I should like to point out some of the essential operations of a two-stroke engine, and the means employed to overcome the general defects common to this type.

(1.) Induction and exhaust have to be completed in a very limited time.

(2.) The ports are small and limited by the diameter and length of cylinder.

(3.) Scavenging with pure air is much desired, but often involves complication. such as special valves, pumps, etc.

(4.) Crank case compression is a weak point.

(5.) Also oil mixing with the fresh charge.

(6.) Carbonisation on top of piston, sooting plugs, and clogging up inlet and outlet ports.

(7.) The deflecter is a necessary evil, and it cannot be correctly shaped for high and low speeds; therefore

(8.) Fuel is wasted or residuals left in cylinder which ignite the fresh charge.

(9.) Output is thereby reduced.

(10.) The chief carburetter trouble is that regulation of the mixture is difficult at slow speeds.

How far the most important defects are overcome will be clear at once.

Two and Four-stroke Engines Compared.

Nearly everyone is conversant with the cycles of a four-stroke engine. The time for inducing and expelling the gas always extends over the whole length of a stroke, or, expressed in degrees, the exhaust valve opens at 220° to 245°, the inlet valve at 180° to 220°. In a two-stroke engine, if the inlet port, which is cut lower down the cylinder and opens later, is assumed to have half the length of the exhaust port and a maximum lead of 60°, then the expulsion of the burnt gases has to be completed within 120°, and the fresh charge taken in in 60°. That is, in 50% and 30% less than the corresponding time of a four-stroke.

The ports must, therefore, be made as large as possible. Here a small cylinder is of great advantage. The ports are comparatively larger, and cooling of the cylinder is better, on account of its relatively larger surface exposed to the air as well as of the vertical stays which have to be left in the ports.

To increase the quantity of charge and drive it through the ports at a higher velocity than the engine can induce it, several methods have been tried. In gas engine practice stepped pistons and correspondingly shaped cylinders or separate pumps for gas and air are in use. I propose to employ a rotary blower, like a Sirocco ventilator, for driving out the exhaust and driving in a fresh charge. This blower is mounted on the shaft and forces air into all four cylinders.

It is important, and should be noted, that when the inlet ports are uncovered, as a rule, the fresh gas is sucked in, and if there are residuals in the cylinder which are still burning, the new charge may be ignited and wasted, or a blow back to the carburetter or the crank case may occur. Now by means of this blower it is an easy matter to scavenge with pure air, so that as soon as the inlet ports open only air is forced in and the exhaust driven out.

Function of the Division in Inlet Port.

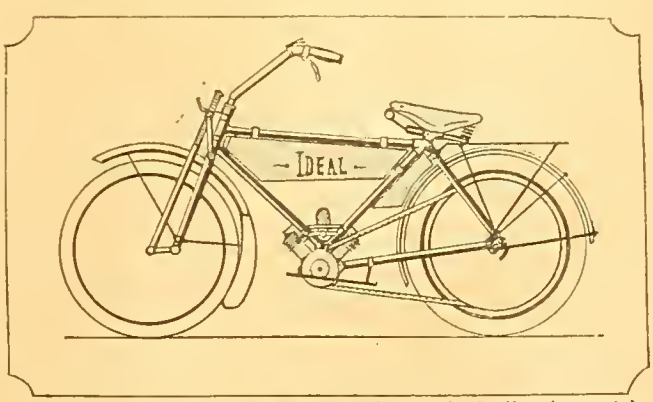
By placing a division in the inlet ports (see C, fig. 4) it is possible to retard the entry of fresh gas until all residuals are driven out.

If a two-stroke engine without forced induction can give an output of 30 to 50% more than a four-stroke, there is no reason why an increase of 50 to 75% should not be possible with forced induction and perfect scavenging. An output of 4 to 6 h.p. at not more than 2,000 r.p.m. is all we want. The magneto has to run at twice the engine speed.

Details of the "Ideal" Engine.

The cylinders are made of thin steel castings with cooling ribs on standard lines, bolted down to the crank case. The pockets for the sparking plugs have only a small opening which prevents sooting up. Around the inlet and exhaust ports dovetails are made, into which the joints of the transfer pipes and exhaust pipes can easily be secured.

The design of the pistons is unusual. They are machined inside and outside, the connecting rods being pivoted on a pin secured in a special seat, which is screwed into the top of the piston. Only one piston ring is provided. The crank case is a steel casting, and has two symmetrical halves. Although a thin casting, it is strong and rigid on account of its compactness. Lugs are provided for attachment to the



What the "Ideal" machine will look like when completed. Note the patented method of suspending the engine, and the magneto position. The four-cylinder engine is drawn in proportion to the other parts of the machine.

My Ideal Motor Cycle.—

frame members, and to take the stay rods for the footboards.

The crankshaft consists of three parts, the two cranks proper, with the shafts and bobweights and the flywheel in the middle, to which they are secured. This flywheel separates the two halves of the crank case, and has grooves turned in its periphery. Rings which fit the grooves ensure compression in whichever half it may be required. It must be understood that, although a blower is employed, the compression and suction in the crank case are still utilised, and will assist the blower. A partition is also employed in the upper half of each side to separate the piston from the crank case, and to prevent too much oil spray being forced up. It is unnecessary to draw attention to the good properties of this arrangement of engine and crankshaft as regards balance.

Ball bearings are provided for the crankshaft, and a cover plate and special gland keep the bearings oil and compression tight.

CARBURATION.—There is no carburetter, no mixing valve or float control. Each inlet port has a horizontal partition in the centre, allowing the scavenging charge to enter the top half, the inrush of air *viâ* the lower half taking with it the petrol from jet B.

Reference to figs. 4 and 5 shows that each cylinder is provided with a jet tube in which slides a miniature piston. Small grooves and holes in the piston register with similar holes in the petrol admission pipe B, and by moving the piston up or down the petrol enters through two or more orifices, flows down the piston and through the jet.

A single lever on the handle-bar controls two of these pistons, so that there are two levers on the bar, one for the front and one for the rear pair of cylinders. It is, therefore, possible to run on one pair of cylinders if deemed desirable. It may here be repeated that no petrol enters the crank case. As soon as the bottom of the piston on its upward stroke has passed the lower inlet ports D, pure air rushes in from the blower, the descending piston compresses it in the crank case, and through the transfer pipe C it enters the cylinder. No petrol mixes with the air until the division in C is reached.

Ingenious System of Lubrication.

Lubrication is a most important item, especially in a two-stroke engine. In my design the main supply is by drip feed, which can be regulated and set. For lubricating the cylinder walls part of the compression in the crank case is utilised. In the base of each half of the crank case is a horizontal pipe with non-return valve. This pipe is led into the other half of the crank case and *vice versâ* (see figs. 6 and 7). The oil which collects in the case is forced by the compression in one half of the crank case through a double jet into the other half of the crank case. The jets through which the oil spray is blown are fitted so that they direct the oil on to the connecting rod big ends (see fig. 6). A little oil will naturally be forced through the transfer pipe into the cylinder, but as there is a partition between cylinder and crank case the amount will be small and cannot interfere with the proper running of the engine.

The engine is being built now, and as soon as it is finished I intend, with the Editor's permission, to give an account of its behaviour on the road. In the meantime, the sketch will give an idea of what my "ideal" will look like.

HINTS ON COMPETITION RIDING.

AT a meeting of the North-West London M.C.C. on the 3rd inst., Mr. Harold Karslake read a most interesting paper on the subject of "Competition Riding." Below we give a few excerpts which cannot fail to interest competition riders.

Dealing with reliability trials, Mr. Karslake instanced what he considered one of the most difficult objects in view, and that is the running to schedule time. The best system, he considered, is to start at a slightly greater speed than that set for the trial until half a minute is in hand, and then try to maintain this position as nearly as possible. The reason for doing so is that it is very much easier to waste time than to make it up, and it will be found in practice that this extra bit in hand will always enable the rider to get very nearly on time at a check.

On approaching a town of any size it is advisable to get from one to two minutes ahead because of the low speed which is almost invariably necessary when entering and leaving a town with any amount of traffic.

Passing on to the subject of hill-climbs, a form of competition in which the experienced rider has a very great advantage over the comparative novice, the competitor should assure himself of the absolute efficiency of the power unit. As regards carburetter adjustments, the fitting of a larger jet, raising the level of the petrol in the float chamber, and providing more air both below and above the jet are usual, but it is not generally known that the single jet as fitted to the Brown and Barlow and similar carburetters can be enlarged in two ways. The top can be closed and two or three holes made in it, or the top closed and two or more knife edge slits made on the edge top. Experience shows that either of these systems gives a better result than simply enlarging the single hole.

In petrol consumption trials the engine compression must be perfect; the exhaust valve lifter must work as high as possible, and the inside of the exhaust box and pipe must be quite clean. The usual touring jet is best in the carburetter, but the level of petrol must be at least one-eighth of an inch down from the top of the jet, and if a control to the air below the jet is fitted, the level of petrol can be even lower. Another very important matter is lubricating oil, and the best water-cooled oil should be used if the day is not exceptionally hot. In that case mix equal quantities of air and water-cooled oil, and it is as well to remember that as much oil may be used as possible. Then there is the question of carrying extra petrol if the tank is not thought to be large enough. The only satisfactory way of doing this is to have a spare tank fixed on the top tube above the tank and a tap from it to turn into the main tank.

In his final words of advice, the writer of the paper exhorted competitors to give officials as little trouble as possible.

LEADING MOTOR CYCLE CLUBS

R. H. Williams, Trials hon. sec.

A. V. H. Blake, late hon. sec.

No. 5.—THE GREAT YARMOUTH AND DISTRICT MOTOR CYCLE CLUB.

THIS organisation was first started in February, 1906, when a few motor cyclists met in Yarmouth to form a club, the moving spirit being Mr. F. Worts, who was backed up by Dr. T. W. L. Beales and Dr. H. R. Mayo. At this meeting it was decided to affiliate to the Auto Cycle Club, and the affiliation was continued until the end of 1908, when it was thought that it would be better to cancel it as it just made the difference between a solvent and insolvent club. At this meeting Mr. F. Worts was elected hon. sec., which post he held until the end of 1907, spending a great deal of time in influencing motor cyclists to join the club. At the end of the first year he had got together thirty-three members. Dr Beales was elected president, remaining with the club until the end of 1909, when he gave up the motor cycle for a car, his retirement being a great loss to the club.

In 1908, Dr. V. H. Blake became hon. sec., in which position he acted for two years, but had to resign owing to pressure of other business, and also the increase of work in connection with the club, which was growing larger every year and held more competitions.

In 1910, Mr. H. Collins was elected hon. secretary, and Mr. R. H. Williams assistant hon. sec. The vacancy created by the resignation of Dr. Beales was filled by Dr. H. R. Mayo, who made an excellent president, turning up at all competitions and looking after things everywhere; he also presented a silver cup for the 200 miles reliability trial won by Dr. Blake, and he has also offered another for the same event this year.

For the current year Dr. Mayo will still remain president, and Mr. H. Collins hon. sec., while Mr. R. H. Williams will be trials hon. sec. The club now has forty-five active members, and hopes that the sporting programme will result in a considerable increase in membership. The entrance fee is 5s. and the annual subscription 5s.

The annual general meeting and dinner will be held in Norwich this month.

Performances in the Team Trial.

The club was first represented in competitions in 1907 at Daventry in *The Motor Cycle* Challenge Cup Trials, and found the hills too steep for some of the machines, but in 1908 it secured second place. This is the best performance up to the present since the first attempt in 1907, and the club hopes to come out on top in 1911, as another team will be sent over with its now famous mascots the Yarmouth bloater, which should bring better luck than was experienced in 1909 and 1910, when the team was dogged by misfortune before arriving at Daventry. No less than fourteen of the members rode over to take part in, or to see, the event, some of the Yarmouth men riding 160 miles each way to see the trial. Members have competed more or less successfully in the London to Edinburgh and back, and London to Exeter and back, four riders obtaining gold medals. Mr. R. O. Clark has distinguished himself at Brooklands, the Stadium, and the Isle of Man. Two members formed part of the M.U. motor cyclists at the military manœuvres, and it is hoped that many more will assist at the manœuvres this year, as they are to be held in the Eastern Counties.

The club has been gradually increasing its competitions each year, and last year held a hill-climb, a 200 miles reliability trial, an eliminating trial for the M.C.C. Cup Trials, gymkhana and race meeting, the latter being over a course in Gunton Park, Norfolk, which was kindly lent to the club by Colonel the Hon. C. Harbord.

The season 1910 was closed by a dinner and prize distribution held at Yarmouth in October, when the various cups and prizes were presented to the members who had been successful in the competitions.

The club proposes for its 1911 programme to hold a hill-climb, a 200 miles reliability trial, a gymkhana, and a race meeting, also to send a team to Daventry for the M.C.C. trials. At least half a dozen cups have been offered for the various events.

YARMOUTH CLUB OFFICIALS, ALL ACTIVE MOTOR CYCLISTS.

F. Worts (4½ F.N.) | Dr. H. R. Mayo (3½ P. and M.) | R. H. Williams (2½ Bat.) | Dr. V. H. Blake (2½ Enfield.) | H. Collins (8 Bat-Jap.)

Swaying Sensation when Riding.

A query in the issue of February 2nd recalls an experience I have several times encountered, but have never previously seen alluded to in print. On rare occasions a motor bicycle will refuse to travel straight forward steadily. The sensation is extremely disconcerting, reminding the unlucky victim of the uneasy motion of the ocean, and if the pace be increased is exceedingly likely to produce a tumble, while it prevents steering with confidence at any speed.

When analysed it is found that the machine is reluctant to keep vertical, but sways from side to side, or "rolls," while its track follows suit, and leaves a volute mark on the road.

My own experiences are ascribable to three causes. The commonest consists of using tyres of rather deep section (from tread to rim) in an under-inflated condition, and is removed by inflating the tyres board hard.

The second consists of a strained frame, and the symptoms may be chronic and without a new frame quite incurable on machines which have sustained several heavy falls.

The third instance I have only suffered from on a single occasion, many years ago, and as far as I could make out at the time it appeared to be a form of mild but continuous sideslip.

I was riding an old 2¾ h.p. Humber, which steered perfectly both before and after the ride alluded to. Passing through Wiltshire, a thunderstorm damped the summer roads, and as they dried they were smeared with a thin film of the greasiest grease. Till the roads dried my machine "rolled" or "swayed" as described, and my most determined efforts were helpless to keep it upright or steer it straight. Presently I ran on to dry roads, and the machine recovered.

The tyres in use were 2in. by 28in. Clinchers with the ribs worn off, and I have never had a similar experience with another machine or on any other occasion.

How to Test the Lightweight.

I think practised riders are agreed that the outstanding weakness of the genuine lightweights in the past has been a certain inability to *maintain their power*. Of course, no high-speed engine subjected to the deleterious dustcloud can hope to maintain its power unimpaired for prolonged periods, but it has been complained—and I think with truth and justice—that many of the smaller engines lose power much more quickly than the larger types.

If this contention is just, the organisers of trials ought to pay special attention to this point during 1911. The obvious method would be to seal every variable item of the mechanism, time the machine up a tremendous hill, run it 1,000 miles, and then time it up the same hill again, penalising those engines which evinced a gross depreciation in speed.

There are valid practical objections to such a course; we do not expect any machine to run 1,000 miles in a dusty trial without dismantling its carburetter, and such brief stoppages ought not to be penalised. But could not the A.C.U. organise a lightweight trial to cover, say, 250 miles, and test the engines for power maintenance before and after the run? Even this simple test would, I am sure, show surprising results, and be most instructive.

Greasing the New Machine.

Several correspondents wholly miss the point of my ancient tip about smearing the plated parts of a new mount with Rangoon jelly or vaseline diluted with petrol. They say "it must look beastly." Well, I am not saying it looks remarkably spick and span after a few dusty or muddy rides.

The idea is simply a resource for the rider who cannot spare the time to keep his machine clean; if he doesn't grease it, the irregular cleaning will ruin the enamel and plating; if he greases it, at the end of the season a single clean will make it equal to new—brighter and better than the machine which has been polished up twice a week throughout the summer.

Even the man who never breathes on his machine, and keeps twenty different grades of selvyt on his garage pegs, will do well to employ the tip before a mudlarking run. It saves a lot of elbow grease.

Winter Trials.

The next innovation will be a six days' trial in midwinter—scarcely a kid glove undertaking. Yet such events will soon be necessary.

We are all "talking at" the small business man, who is molish or mulish enough to cling to a horse and trap for his thirty mile round. We tell him to get a motor cycle, and so save half his travelling expenses or alternatively double his turnover by covering a larger area. This implies that he can use a motor bicycle all the year round.

When we come nearer home, and inspect our own performances, we find that a select band of crack riders make a tremendous fuss because they get to Exeter, Gloucester, or Harrogate by schedule time. Evidently those who are the most expert riders do not regard it as an ideal mount for all weathers.

The small professional man notices this, and observes that he will have to retain his horse and trap when he buys a motor bicycle; the double *ménage* does not appeal to him, and he does not see precisely where the economy is to come in. Wherefore let us remember, we are not asked to make the motor bicycle capable of negotiating deep snowdrifts, which can stop a horse and trap; the commercial motor cyclist must be prepared to *hire* a pony and trap perhaps six days in each winter.

All we have to do is to produce motor cycles capable of satisfactorily facing all conditions bar deep snow; and several makes practically attain this ideal already. All honour to the stalwarts of Exeter, by all means; but I know several quite middle-aged "knights of the road" who perform equally stern tasks weekly all through the winter and think nothing of it.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Variable Gears and Slipping Clutches.

[5370.]—Referring to Mr. Clarke's criticism [letter 5335] on y article on variable gears and slipping clutches, I think he in error in saying that the torque is theroetically the same all speeds. Owing to the cooling of the gases durin g mpression and expansion, the torque falls off as the speed is, and the figures I gave represent about the usual for engine of the motor cycle type. Perhaps the higher ues of the torque are on the large side As these values for an engine with very large flywheels which would able full compression to be used at low speeds, they err the large side for low speeds for engines fitted with the al small flywheels, as such engines require to have their mpression pressure reduced by throttling to enable them run slowly at all. JOHN L. MILLIGAN, B.Sc.

Staggered Cylinders.

5371.] — Seeing the number of multi-cylinder motor les on the roads nowadays, I have often thought that way in which the cylinders are arranged must tend to rheating. Having come in contact with numerous riders four-cylinder machines, they all complain of their rear nder overheating.

Now on the above mentioned machines the cylinders are a straight line from front to back. Therefore, the first nder naturally gets the full force of air on the front half nder, whereas the other three only get side currents, e or less, therefore overheating.

Now if the first cylinder were to be tilted one and a half es to the right, the second one and a half to the left, so on, there would be much more through draught, and urally not such a great tendency to overheating. As be seen, this would only make three inches difference width. Difficulties would arise in the cam operation, they could easily be overcome. FRANK REED.

The Motor Cycle in the Argentine Republic.

5372.]—I consider the three years' motor cycling I have as some of the best sport I ever got, and only took car driving on account of its being more sociable. h things as sidecars or even tricars would never stand strain put to them on the average Argentine road if one relled at anything like fifteen miles per hour or over. 3½ h.p. twin Peugeot which I rode during the three rs is as good to-day as when I bought it, and I have er had a breakage owing to bad material, although I gh 13½ st.—in fact, the worst troubles I have had have n such things as misfiring owing to mud on magneto, ping belt, carburetter choked, and punctures caused by ning over barbed wire. I have nothing but praise for the geot engine and the way it will pull through all kinds roads; it is also the fastest hill-climber I know for its er, easily beating well-known singles of the same h.p. only fault I can find with the engine is that I have er been able to prevent oil leakage between the cylinders crank case and over the valve mechanism.

I can ever be of any service to any of your numerous ders I shall be very pleased to do all in my power to wer any questions concerning the sport, etc., in this ntry.

Wishing you every prosperity. E. W. BROWN.
Estancia La Campana, South America.

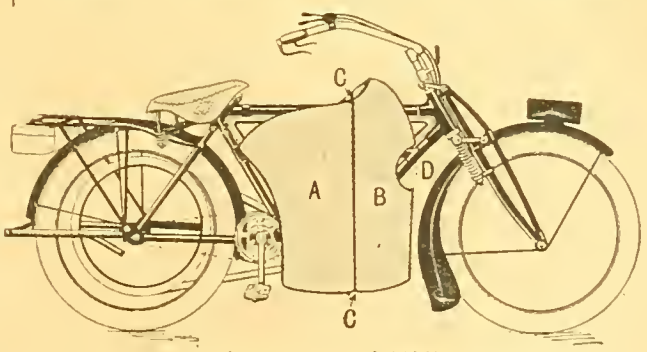
Another Design of Mud and Wind Shield.

[5373.]—I have recently patented a mud and wind shield for motor cycles, and thought the enclosed sketch might be of interest to your readers.

This shield has been tried by an experienced rider and has proved most satisfactory, both for mud and wind protection, at the same time the cylinder is kept perfectly cool.

The front portion B, which is torpedo shaped, can be made of any suitable material, and is fixed in any manner that the shape of the frame, etc., will permit.

Hinged to B at C C on either side are wings A A held in position by springs, in such a manner that a slight touch from the foot of the rider will open them clear of the machine, the object being to enable the rider readily to



Design of mud and windshield.
A. Wing hinged and sprung to B at CC. B. Front fixed portion.
D. Aperture in B for admission of air to cylinder.

dismount. It does not interfere with mounting in the slightest, and can be ridden solo or with sidecar attachment. This shield is not yet on the market, but will probably be so shortly. CECIL H. GREEN.

Sunday Competitions.

[5374.]—Mr. Egerton Pope resuscitates under the above heading an old and long-disputed question—a question, moreover, to which it is nowadays impossible to find a universally satisfactory solution.

I am in agreement with your correspondent to the extent that I acknowledge there are many and sound arguments against Sunday competitions, but what can a provincial club, especially a young club, do?

When a club has a membership roll of 300 or 400, like the M.C.C., then the executive can do without Sunday trials, for on whatever day of the week the trial is held it can from its vast membership confidently rely on a good and representative entry. But to get a satisfactory muster for a fifteen hours' event the small provincial club must fall back upon a Sunday fixture, or content itself with an entry of half-a-dozen.

Again, such an event as a long distance reliability trial is far less obtrusive to the Sabbath-keeping public than would be a hill-climb or a paperchase, and that for reasons too obvious to call for mention here. To the man in the street the long-distance trial is no more than an informal club run: in fact, in the case of the trial under notice a club run would have been far more conspicuous.

In defence of the trial organised by my club on the 22nd ult., let me explain that it was run over one of the most deserted roads in the country; the schedule was 18 m.p.h.; and competitors were started at irregular intervals, in some cases thirty minutes, in no case less than ten minutes. The competitors had all left Exeter by 6.30 a.m., and the first man was not schednled to return until 8 p.m.

Except for the fact that the men ran for a definite object and that medals were awarded, it must, in common fairness, be owned that the trial in no way thrust itself before the notice of the public, and was run on lines that could offend no one's scruples or sensibilities.

ARTHUR M. C. SCOTT,
Secretary Exeter and District M.C.C.

Steam-propelled Motor Cycles.

[5375.]—It might interest those steam enthusiasts whose letters have appeared recently to know that such a machine was in existence about twenty years ago at Newark (N.J.). Being the first motor vehicle I had seen or heard of, it interested me greatly. It was a high bicycle shod with the usual "solids," and appeared a practical machine within limits. STEPHEN DE SAVE.

[5376.]—I was much interested in "An Old Engineer's" letter in your issue of February 2nd. If he can really produce a machine such as he describes let me offer my congratulations. I should be one of the first to buy one, for although the modern motor cycle is so greatly improved there are still many troubles we could well do without. I sincerely trust we shall hear more on this subject in the near future. I do not quite know what sort of help "An Old Engineer" requires, but if I can be of any small service to him I should be pleased. C.H.C.

[5377.]—I, too, am a great steam enthusiast, and am sure that a good steam motor cycle could now be made. Think of the tremendous advantage steam would have over the petrol bicycle. As "Old Engineer" says, and I agree with him, there would be no electrical parts, no carburetters, and a host of other appliances, all of which make the motor cycle less reliable and also add to the cost. Again, there would be no two or three-speed gears and no free engine required. One would only have to put one's leg over the saddle, open the valve, and glide away; hills would be no obstacle, not even with a sidecar. In conclusion, I would like "Old Engineer" to send me all particulars, and I also would like to see more of the steam motor cycle in your esteemed columns. MARK McADAM.

[5378.]—Lately, in your valuable paper, I have read a good deal of correspondence on the subject of steam-propelled motor cycles, chiefly from people who seem fired with enthusiasm about the idea. Most of them bewail the fact that they lack the means and opportunity of experimenting in this direction; all of them claim enormous advantages for this system over the more usual form of propulsion, citing the performances of the steam car as examples of what can be done by their proposed method.

In the first place, these steam enthusiasts seem to have lost sight of the one great indisputable advantage of the internal combustion engine over the steam engine, viz., the fact of its heat-producing plant being self-contained, instead of being entirely external and separate as in the steam engine. This one fact, apart from the well-known superiority of the thermal efficiency of the internal combustion engine over the steam, is sufficient to damn their scheme from the beginning. If this fundamental advantage of the internal combustion engine over the steam is not apparent and recognised, why is the steam-propelled motor car in a minority on the roads nowadays? Why are marine engineers attempting to adapt the internal combustion engine to the propulsion of the largest vessels? The steam engine had forty years start of the internal combustion engine. It was nearing its zenith of perfection before the gas engine was invented.

Granted that the steam car possesses all the advantages claimed for it—lightness, ease of control, flexibility, lightness on tyres, etc.—yet, if one looks at the successful driver of a steam car, one sees him to be both an enthusiast and an expert, as he needs to be to get good results from the complicated mechanism on his car. What is the keynote of the theme the best designers and most capable engineers are hammering out in the drawing offices and worshops every day toward the perfection of the gas engine?—"Simplicity, simplicity, simplicity," in every little detail.

The demand is for a fool-proof machine, and to this end the efforts of the best brains are now being directed.

To descend to details. Your correspondent, "An Old Engineer" [No. 5336] remarks that he proposes to drop petrol, ignition appliances, pins, levers, silencer, etc. But, on the other hand, he must take up paraffin, or some other unpleasant oil as fuel, various jets and burners for burning it, considerable lengths of piping to connect his boiler and engine, and, above all, a bulky condenser, as the law does not allow him to exhaust into the atmosphere. And if he is going to do away with wires and levers, then I can only suppose that he is going to control his machine, in its from forty to two miles per hour gait, by some process of mental telepathy, in which case I and your readers may confidently look forward to such a triumph of mind over matter as will set the world by the ears.

No, sir. Steam as a means of propulsion for light road vehicles is dead. Its epitaph—"It lacked simplicity."

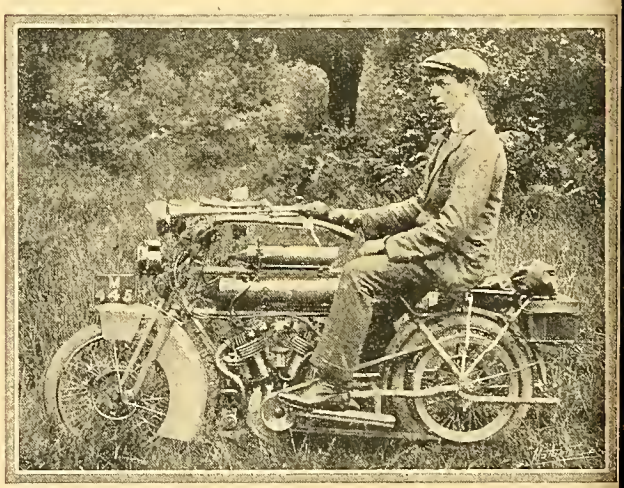
JR 51.

A Fast Touring Machine.

[5379.]—I have pleasure in sending a photograph showing my 5 h.p. T.T. J.A.P. fast touring machine which I had made to my own instructions and design. A few particulars may be of interest to your readers.

It has twin belts, and runs on 24in. road wheels; it is also fitted with an Elliott speed indicator, musical horn, and two separate lamps. Another special arrangement is the petrol and oil, which are fed under pressure.

I have designed the machine so that it is only necessary to remove three bolts to take away the engine, which is, I think, very advantageous. The petrol and oil pipes are all connected with spring catches. I have had it geared up to 65 m.p.h., and I carry a spare cover and tubes as well as a tool bag.



5 h.p. J.A.P. with pressure-fed petrol and oil supplies. (See accompanying letter).

In designing this machine I had to consider the technical perfection of the apparatus which is included; also I included the lightest material possible.

The lamps I use are of the Siemen's "Onewatt" metal filament make, which are run off an accumulator. The result has been very satisfactory indeed.

I consider, therefore, that my machine is of the very latest design and embodies all the new and recent improvements. I shall be pleased to send any of your readers further particulars if they write me. SHALTO D. M. WILSON.

Scavenging Devices.

[5380.]—I cannot see how the automatic scavenging device described by Mr. R. H. Churley [letter 5339], February 2nd, can present any possibilities. Mr. Churley rightly points out that complete scavenging means an

increase of power, but is this increase greater than the loss of power necessary to compress the air behind the scavenging piston?

By a simple calculation it can be shown that with a standard 3½ h.p. engine fitted with the scavenging device a great deal of power, perhaps as much as ¾ h.p., is required for compressing air in scavenging cylinder. By a full charge Mr. Churley seems to understand that required to fill clearance volume, besides what is ordinarily understood by cubical capacity.

He points out that at the beginning of induction stroke this clearance space is full of burnt gases, and as a remedy he fills this space, all except the valve chamber, with a piston; or can he expect that during the induction stroke the scavenging piston moves up, compressing the air in the scavenging cylinder, in spite of the fact that the pressure in the power cylinder is less than that of atmosphere?

A. BURNS LAWSON.

A Rule of the A.C.U. Quarterly Trials.

[5381.]—We are unfortunate in having failed to obtain a first-class certificate in the Hastings trial owing to a misapprehension on our part. We did not understand that it was absolutely essential that the machines entered should be fitted with magneto. All our machines that are on the market are fitted with magneto, but unfortunately, owing to a delay in the delivery of the magneto, the runabout entered for this trial was not so fitted. In respect of hill-climbing and non-stop run our runabout behaved perfectly.

MORGAN AND CO.

Cost of Running a Motor Cycle.

[5382.]—Your admirable paper is to my personal knowledge perused by a goodly proportion of the motor cyclists of the future, and undoubtedly a large number of these are deterred from enlistment into the ranks of practical riders by an exaggerated idea of the cost of maintenance of a motor cycle.

I think you will agree with me that I am qualified to attempt to remove this idea when I tell you candidly that I have owned and driven three different motor cycles during the last four years on a weekly pocket allowance of 10s. per week; in fact, the allowance during part of this time was only 8s. per week.

Enough for the preamble. Having sold my old machine I studied your advertisement columns about twelve months ago and went to inspect various machines. My old machine sold for £10, and I had made up my mind to encroach upon capital to the further extent of £20, and I finally came across an advertisement of one of the desired make, a 1909 Triumph, only four months old, in January, 1910, for £37. I purchased that machine for £33, including lamp and everything essential, and it had not been above 600 miles. That is the way to buy cheaply; this is the way to run cheaply.

In summer I know from test that I can get 120 miles to the gallon (I only weigh 8½ stones), but taking an average of 100 miles to the gallon, and I never waste any of this valuable spirit; in fact, I run it out of the tank if the machine is to stand by.

	£	s.	d.
Petrol, 7,000 miles, cost	3	10	0
Lubricating oil		15	0
New belt after 4,000 miles		12	1
Licences	1	5	0
Total	£6	2	1

Average for 7,000 miles about a farthing per mile.

Of course, there is depreciation, but I can guarantee that if I sold the machine now I should not lose £5 for this, and even then it would average less than ½d. per mile, and for about 1,200 miles of this I have had a cyclist in tow. I maintain that my small expenses in tyres, belts, and breakages are accounted for by the fact that I do not "scrap," but potter at a comfortable twenty or just over. My own tyres with changing over from back to front have done altogether about 7,600 miles, and they are not yet done for.

PENURIOUS HEDONIST.

P.S.—I want a riding companion in Birmingham, and shall be glad to hear from any reader who thinks my speed and wants would suit.

[5383.]—I am a rider of a four-cylinder F.N. and have a fancy for a single-cylinder 2¾ h.p. two-speed. I shall be greatly obliged if your correspondent, Mr. F. T. Marley [5330], will give his weight. I think the detailed account of his expenditure shows good results, but as I weigh 14 st. and live in a hilly district am I expecting too much from a lightweight? I hope to see Mr. Marley's reply published.

J. W. HINDS.

Twin-cylinder Sociables.

[5384.]—I believe I was the only private owner to drive an A.C. in the Quarterly Trials, and should therefore like to inform "Ilikum" that I quite appreciate his remarks *re* twin-cylinder sociables. I suggested to the makers before my machine was finished how nice a 7-9 h.p. twin engine would be. Their reply was, "Why do you want more power when the present unit will take you anywhere?" Quite so. But I have had a 3½ h.p. motor cycle, and I have had a 7-9 h.p. My experience is that the knowledge of a great reserve of power is a comfort in itself.

The flexibility of the A.C. engine is marvellous. Some engines I have had when they began to die on a hill their death was very sudden. Not so with the A.C. It fights right up to its last gasp. Possibly it may be owing to the flywheels. I think it was about three years ago that a letter of mine appeared in *The Motor Cycle* advocating a flywheel on each side of the crank case.

As regards "Ilikum's" remarks about the A.C. touching 40 m.p.h., I am perfectly willing to demonstrate that proof to him if he cares to come to East Liss, Hants.

My A.C. will go anywhere. There is not a hill I know of that it will not climb with two up, and although my mouth waters sometimes for a little more power, I would not swap it for any other passenger machine I know of.

A. J. ATKINGS.

Is the Vertical Cylinder Best?

[5385.]—I am naturally somewhat interested in this controversy on account of the inclined position of the cylinder of the 4 h.p. Indian. Here we have a variation from the forward position mentioned by "Engineer," inasmuch as the Indian single-cylinder slants backwards. I remember quite well some years ago asking Mr. Hedstrom why it was that he inclined the cylinder instead of setting it vertical, also why he inclined it towards the rear.

His answer was that he had several reasons for doing this, the first and most important being that when the cylinder was set in the vertical position the piston had an inclination to give off a peculiar metallic ring, caused by slight rocking. He admitted, however, that this had been overcome by many manufacturers by fitting a ring at the bottom of the piston. With the cylinder set at an incline this metallic noise was found to be entirely absent.

Apart from this, the inclined position allowed of a much lower frame, ample tank room, and also allowed the cylinder to be removed without taking the engine out of the frame. The particular reason the cylinder was inclined backwards was in order to make the machine symmetrical by making it lie parallel with the seat-pillar tube.

In regard to cooling, I quite admit that an engine placed with the head pointing somewhat forwards presents more cooling surface on the combustion head, but the manufacturers of the Indian have adopted the practice, which I often wonder is not recognised by other manufacturers as possessing a great advantage—that is, they run the exhaust pipe out of the rear of the combustion head so that the heat which is generated in this part does not have to circulate through the whole combustion head before it is carried away by the cool air coming froom the front.

This method of leading away the exhaust at the rear undoubtedly accounts for the fact that such a thing as a broken or burnt exhaust valve on a single-cylinder Indian is almost unheard of.

W. H. WELLS.

The Problem of the Runabout.

[5386.]—With the many "revivals" which have appeared as new designs, it is rather curious that the old "Eureka" has not been re-discovered. I had one some ten years ago, and thought very well of it at the time. It certainly appears a better design than some shown recently.

As you may remember, it was somewhat on Phänomobile lines, but much lighter, simpler, and had four wheels. It

possessed two distinct advantages—air cooling could be successfully employed, and there was sufficient weight on the front wheels to make it steer well. But after all, why four wheels? The outstanding advantages of the type—the sociable position, protection from dirt and weather, the possibility of driving in ordinary attire, combined with those of the cycle proper—appear (on paper anyway) to be possessed by the "Davis Double." STEPHEN DE SAVE.

[The Eureka was a four-wheeled motor cycle which took part in the 1,000 miles trial of 1900. They had front steering and front driving through gears, and were provided with a change of speed. Their riders suffered many troubles, and although they did not complete the journey they were warmly commended for their pluck in adhering to a difficult task.—ED.]

[5387.]—With reference to your article in the issue of February 2nd, "The Problem of the Runabout," we think in justice to this type of machine we must put the case for it forward from the point of view of actual users as distinct from the view of one who has obviously not had practical experience of their capabilities. The design and construction, which are novel and simple, are not really so crude as you indicate. The writer of this letter was the first person of English nationality to try machines of this type in this country, and he was immediately impressed with their capacities and potentialities.

We have not experienced any belt troubles, and our only fear of trouble in this direction is that they may wear out. This, however, is a common fault with the transmission of a motor vehicle; even sliding gears of the Panhard type will not last for ever. If part of the transmission is by chain, although it works perfectly in practice, we consider it would be better done by a simple shaft and bevel gear, still leaving the final transmission by twin belts.

It is sometimes doubtful whether a complication is always an improvement. As an example, the multiple disc clutch with its attendant number of complications and increased number of parts is not any more effective, in our opinion, than the old leather faced cone clutch as used by Panhard.

We consider the runabout type of machine, which has had a large amount of thought and experiment bestowed upon it, to be as far in advance of the old chain-driven tricar as is the modern motor bicycle in advance of that of six years ago. L. N. PALMER AND CO.

Twin-cylinder Sociables.

[5388.]—In reply to "Ilikum"—with whose *nom-de-plume* I entirely agree—may I say that he is mistaken in supposing that the 5-6 h.p. A.C. Sociable is under-powered. I have driven one of these little cars since last July, in all weathers, and over some of the hilliest country in Kent, Surrey, and Sussex, and I have always found the power ample. For instance, the hill at Warlingham that unseated so many riders in the last Quarterly Trial, I climbed a few days ago with three up, and with nearly half throttle in hand. As for speed, I have done 35 m.p.h. by speedometer, and my A.C. is geared 4½ to 1. On a 4 to 1 gear and a good road 40 m.p.h. should be easily touched. In adding the usual disclaimer I would like to state that so far I have spent nothing on repairs or renewals, and my only road stop was caused by a sooted plug. Tyres are unpunctured (touch wood) and practically like new. ME 2.

[See also letter No. 5384 on previous page.—ED.]

Possibilities of the Slide Valve Engine.

[5389.]—I must congratulate you upon the excellent manner in which your contributors "The Gemini" have dealt with the possibilities of the slide-valve engine, and although I endorse their contentions as a whole, there are a few points with which I should like to deal, and for which I crave the hospitality of your columns.

In the first place, do you not consider that too much is made of the valve breakage trouble? True it is that valves do sometimes break, but how often?

I should like to point out that practically the only work which is lost in operating the sleeves is that required to overcome the very slight friction set up by the two well-oiled surfaces of the sleeves; the rest of the work is returned to the eccentric shaft as the end of the sleeve-stroke is approached. It is also well to bear in mind that the sleeves at times travel in the same direction as the piston.

The unbalanced force of the additional reciprocating parts is very slight, since they only travel at half engine speed and since the stroke is somewhat less than one inch. I am sorry that the old bogey of engine seizure has once more been brought out against this type of engine, as I thought that its immunity had been satisfactorily demonstrated. It has been suggested that engines of the slide and poppet valve type should be drained of all oil and run until they seized. I am of opinion that the poppet valve engine would be the more readily placed *hors de combat*; in all probability the Knight engine would start away again as fresh as ever after a slight injection of paraffin through the sparking-plug hole.

One point not touched upon by your contributors is the tendency of the mushroom valves to bounce from their cam contours at anything like high speed; the Knight system, of course, cannot vary one hair's breadth at any speed.

The cylinder head does not need to be a gas-tight joint—the rings in the dome of the head serve that purpose. I might here remark that the small studs for securing the head to the cylinder are apt to crystallise and break off when the nuts are tightened down, even with water-cooled heads and cylinders, so that this trouble might consequently be expected to assume significant proportions with a cylinder dependent upon air cooling.

I would suggest that the engine be inclined in a way similar to that practised by Messrs. Phelon and Moore, thus giving the head every chance to cool. Personally I think that a slide-valve air-cooled engine is quite feasible if the engine is placed in a good position and the ribs are made deep enough. Would it not be possible to make the head of some good conductor, such as copper, and lined with a cast-iron shell on the inner side?

SOUTER JOHNNY.

T. Bullus (3½ P. and M.) holder of the Dyson shield (Bradford M.C.C.), Leeds to Edinburgh cup (Leeds M.C.C.), N.S.U. cup (Bradford M.C.C.), and numerous gold medals.

SUMMARY OF CORRESPONDENCE.

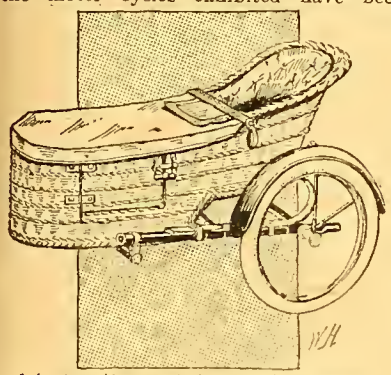
Will R. Crawshaw, who wrote from a Glasgow hotel regarding the letter signed "An Old Engineer," send his present address?

W. H. Morgan, whose carrier seat was recently illustrated in our letters columns, writes to say that he has not had time to reply to all the enquiries he received from readers as yet.

A number of letters are unavoidably held over owing to their having been received late.—ED.

MOTOR CYCLE SHOW AT LEICESTER.

THE second show at Leicester, held in the halls of the Leicester Young Men's Christian Association, opened on Wednesday last week with a record exhibit, mostly through the local trade, and remained open until Saturday. All except two of the motor cycles exhibited have been



Leicester sidecar attachment with extension for carrying petrol can or spares.

dealt with in our Olympia Show numbers, so that only a passing reference is needed. The two exceptions—the Curry and the Campion—embody no special points of design, the former being constructed on standard lines throughout, with Druid forks and J.A.P. engine, whilst the Campion had a Peugeot engine and Roc two-speed gear, and in this form is primarily intended for sidecar work. It will be seen from the list on this page that practically the only leading mount not represented was the 1911 Premier with auxiliary exhaust. It so happened we were able to make up the deficiency, as we journeyed to Leicester on a machine of this make. Practically all the leading makes of motor cycles were represented, those on view including:

Bradbury, Rex motor bicycles and Rex Sidette, Moto-Rêve, Bat with P and M. gear and Morrison's spring wheel sidecar (shown by W. J. Glover and Co., Ltd.)

The motion of the sidecar wheel is checked by two cushion and two check springs enclosed in telescopic tubes. The tension of the springs is adjustable.

Zenith-Gradua, Matchless, Douglas, Enfield, and New Hudson. (Agents, Paskell's, Ltd.)

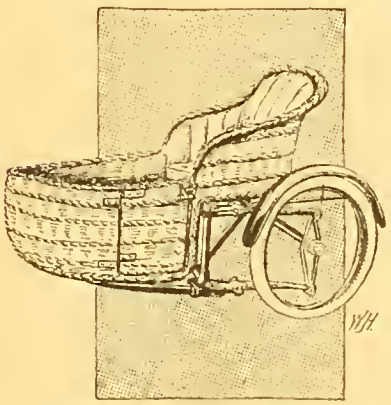
Campion with J.A.P. or Peugeot engines, and Roc two-speed gears, also 3½-h.p. Singers. (Mr. Saunders.)

Ariel 3½ h.p. single and variably geared machines. (H. Lines.)

Triumph free engine and T.T. roadster models. (C. Williams.)

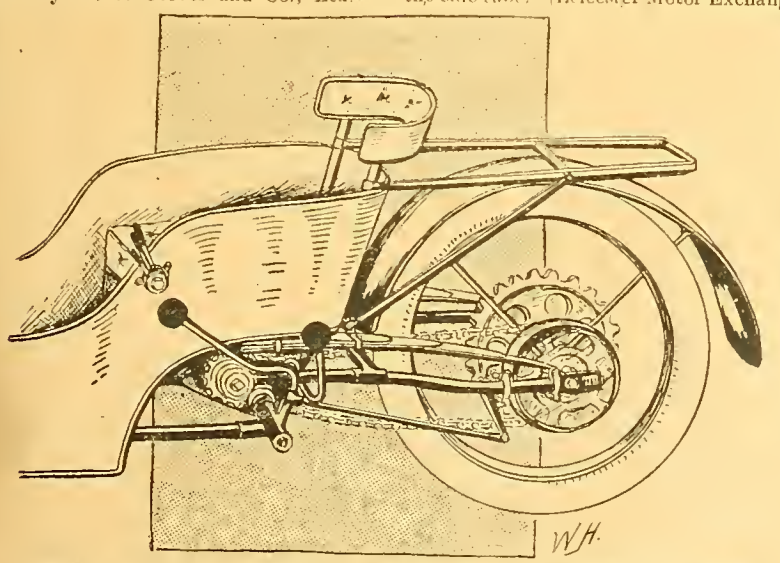
A.J.S. and Calthorpe. (W. H. Chapman.)

Clyde. single and two-speeds. (G. H. Wait.)



The system of springing adopted on the T.A.C. sidecar is exactly the same as on the bicycle wheels.

F.N. four-cylinder and Leicester sidecar, also various accessories, including Dr. Stormont's and Eli Clarke's mud-shields. Two good points of the sidecar are illustrated. There is plenty of leg room in the body, or a child's seat may be fitted if desired, and the mudguard stay bracket is separate from the axle and clamped to the side tube. (Leicester Motor Exchange.)

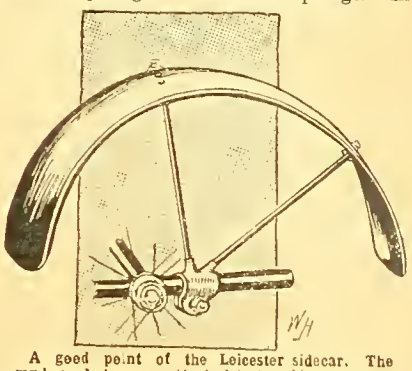


Details of the rear wheel springing of the Morgan runabout. The laminated springs are relieved of side stresses by the tubular radius rods. The change speed, brake and control levers will also be noticed.

Rudge-Whitworth free engine and direct driven. (Per Mr. Simpson.)

Kerry-Abingdon. (T. H. Wathes and Co.)

Wilkinson T.A.C. and sidecar, with all wheels sprung on laminated springs. In



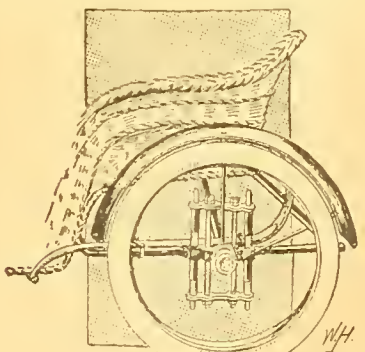
A good point of the Leicester sidecar. The mudguard stays are attached to the side tube, rendering the wheel readily removable.

the new models the engine has been set further back, the driving-shaft shortened, and a specially adapted Amac carburetter with central induction fitted. Handlebars are now fitted as standard.

Curry-Jap. (Curry and Co.)

Much interest centred around the exhibits of the Bedelia, the Morgan, and the L.M. The former was driven down by road from London with its single gear and 4 h.p. engine. A 7 h.p. twin J.A.P. engine may be fitted to order.

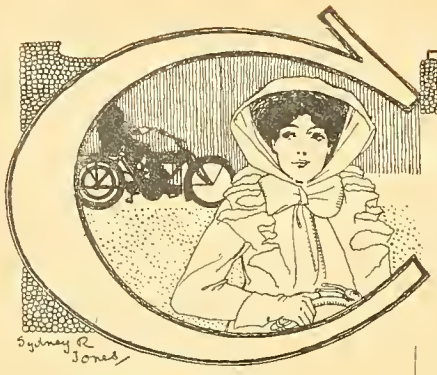
Among the tyre companies exhibiting were: W. and A. Bates, Ltd., the Hutchinson Co., and the Leicester Rubber Co. Accessories were scattered over the



Morrison's spring wheel sidecar. Spiral springs are enclosed in the telescopic tubes shewn.

different stands, except for the exhibit of the Utopian Cycle and Motor Cycle Works, who showed the Antob switch and magneto cut-out, and a roomy sidecar built up of Chater-Lea fittings throughout.

We gathered that business on the whole was fair, and the attendance up to last year. Local shows are more the means of stimulating interest among new converts, and also giving the opportunity to motor cyclists of examining and comparing the machines they fancy side by side. The benefits of such exhibitions, either directly or indirectly to the manufacturer, are often felt afterwards



OUR RENT CHAT

Time to light Lamps
(Greenwich)

Feb. 16th	... ...	6.13 p.m.
,, 18th	... ...	6.17 p.m.
,, 20th	... ...	6.21 p.m.
,, 22nd	... ...	6.24 p.m.

Special Features

NOVEL TWO-STROKE V TYPE ENGINE.
THE MOTOR CYCLE STEAMER.
HINTS ON COMPETITION RIDING.
LEICESTER MOTOR CYCLE SHOW.

"The Motor Cycle" Index.

A complete index of the contents of *The Motor Cycle* for the six months ended December 29th, 1910, is now ready. Copies may be obtained from our publishing office, 20, Tudor Street, E.C., price 3d. each.

A.C.U. at Manchester Show.

The Auto Cycle Union will be represented at the Manchester Show, and full particulars of the new five shilling membership scheme may be obtained at the Royal Automobile Club stand, No. 569.

Honister Pass.

The secretary of the Westmoreland M.C.C. informs us that Honister was climbed on Friday, February 3rd, by L. S. Parker, of Kendal, on a 1910 Scott, and that his performance can be vouched for by Mr. Johns, of Keswick, and quite a number of residents in the neighbourhood.

Police Activity in Worcestershire.

Motor cyclists in the neighbourhood of Bromsgrove (Worcestershire) should ride with caution. Three cases of driving to the public danger resulted in fines at Bromsgrove last week. J. H. Slaughter was fined 40s. and costs, Leonard Newey £5 and costs, W. J. Henderson £3 and costs. The chairman, Major Wiggin, said the Bromsgrove district was infested by trial cars and motor cycles, which were a nuisance. The roads were not made for the purpose of testing cars to the danger of the public, and the bench were determined to stop the practice. In future offences the fines would be doubled.

Carnival in the Antipodes.

The novel expedient of holding motor cycle races on a horse racing track was tried at Wagga Wagga (N.S.W., Australia) early in the New Year. Two races, one of 2½ miles and the other of 10 miles, drew a number of entries, with the following result:

1. J. E. Lucas (Triumph).
2. P. Collins (J.A.P.).

Time, 3 min. 32 secs.

The ten miles event was won by:

1. S. Ralston (Triumph).
2. P. Collins (J.A.P.).

Time, 12 min. 22⅘ secs.

A relay race was won by S. Brunskill, and a five-mile event by W. E. M'Carthy.

During the afternoon T. W. Green, a well-known amateur, attempted to set up a mile record on his 5 h.p. twin Matchless-Jap. In practice during the morning he had covered a mile inside a minute, but the best he could do in the afternoon was a mile in 61½ secs.

Another Match—Roller Skater v. Motor Cyclist.

At the Grimsby skating rink recently, A. K. Plaistow riding a 1911 pattern 2 h.p Humber lightweight beat a roller skater by about forty yards in a mile race. Time 3m. 1s. The match was the outcome of a challenge.

Grants from the Road Board.

The recently constituted Road Board has just issued a list of grants which it has made to the authorities of various counties for the improvement of roads. It must be understood that in all cases no grant has been made unless the local authorities themselves were willing and agreed to spend a sum which the Road Board thought adequate for the proper maintenance of the highways in the respective districts. The total amounts allocated to the various counties are: Lancashire, £35,500; Carnarvonshire, £3,000; Lincoln (Lindsey), £10,150; Bedfordshire, £390; Nottinghamshire, £10,000; Buckinghamshire, £5,000; Kent, £20,000. Total, £84,040.

Over Eighty-four Miles in an Hour!

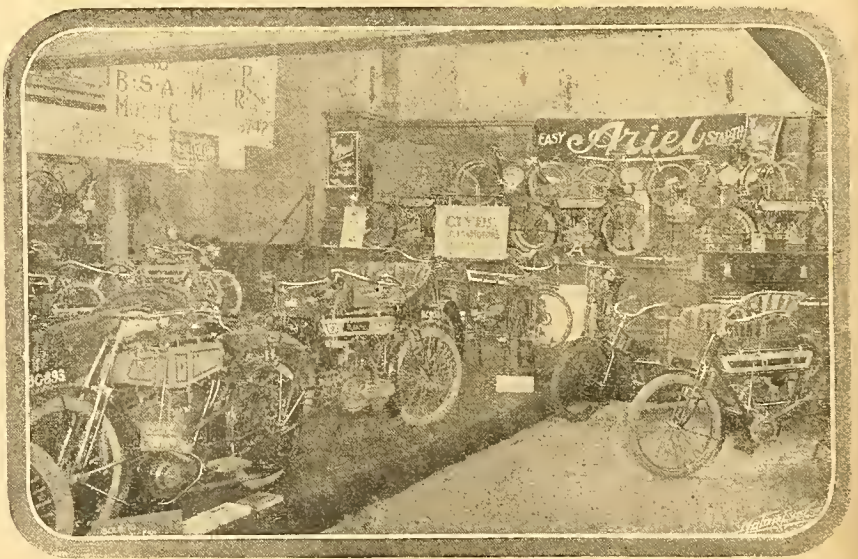
A cablegram announces that on the 8th inst., at San Francisco, California, Jake De Rosier, riding an Indian, covered 84 miles 135 yards in one hour on the new half-mile circular board track there.

Hill-climbing.

With the fine weather and roads there was almost a summer turn out on the Sevenoaks and Maidstone roads at the week-end. At Westerham, Cudham, and other test hills several trials were made, and one motor cyclist carried a passenger scaling sixteen stones on his machine. At Birdlip a contingent of nine Rudge riders was seen. Several made clean ascents, one rider scaling over sixteen stones.

Suggested New Roads.

The London Traffic Branch of the Board of Trade has issued a most comprehensive report on traffic in the London district, showing that now is the time to start a great scheme of road improvement. One hundred miles of new roads are projected and twenty-five and a half miles of improvements to old roads. The following four new roads are thought to be the most important: Hackney to Romford, 13 miles; Paddington to Uxbridge, 13 miles; Knightsbridge to Chertsey, 10 miles; Brentford to Tottenham, 18¼ miles.



A corner in the Leicester Motor Cycle Show held in the Y.M.C.A. buildings (see previous page).

Herts A.C. Ladies' Tour to Harrogate.

The following ladies will in all probability assist in connection with the Herts County A.C. Ladies' Competition for *The Motor Cycle* cup: Miss Behrend, Mrs. De Lissa, and Miss M. Hind.

Coventry Riders Fined.

Several motor cyclists in the employ of Coventry manufacturers were summoned and fined last week for driving to the common danger on Stoneleigh Hill, Warwickshire. Midland riders are advised to exercise caution on this hill, also in the district of Warwick and Leamington.

German Motor Cycle Corps.

Representatives of the German War Office and the Association of German Motor Cyclists met last week to discuss the question of the formation of a motor cycle corps. It is proposed that this body of motor cyclists should be formed on the lines of the German Volunteer Automobile Corps, their duties to consist of despatch carrying and patrolling over long distances.

Hedge Trimming.

The decision of the Tiverton Rural District Council to prosecute thirteen defaulters who have refused to trim their hedges in the interest of the safety of road travellers and the general public is being supported by the Roads Improvement Association, and will doubtless be commended by motor cyclists as well as car owners, as overhanging hedges not only prevent the proper drying of the road surface, but also expose all forms of traffic to unnecessary danger.

January Imports and Exports.

Imports of motor cycles and parts during last month compared with the corresponding months of the two preceding year are represented by the figures below:

	Quantity.	
1909.	1910.	1911.
Motor cycles—		
24	120	116
	Value.	
£629	£3,676	£3,603
Parts thereof—		
£2,184	£3,888	£3,503
£2,813	£7,564	£7,106

Usual Jump in British Exports.

Last month's exports of British-made motor cycles and parts culled from Board of Trade returns are shown beneath:

	Quantity.	
1909.	1910.	1911.
Motor cycles—		
82	238	515
	Value.	
£2,461	£8,702	£18,804
Parts thereof—		
£2,043	£2,283	£4,895
£4,504	£10,985	£23,699

Re-exports.

Foreign machines re-exported from this country last month were valued at £773.

The Shap Fell Climb.

The secretary of the Westmorland M.C.C., which club is responsible for this climb, informs us that the prizes offered are valuable, and should influence intending competitors. For lightweights, twins, and two-speed and variably geared machines, the prizes are valued at five guineas each, whilst for single cylinders a pair of Palmer tyres and tubes will be given. A gold medal will be presented by Zenith Motors, Ltd., for the fastest time of the day. There are also additional prizes contingent upon the number of entries received.

FUTURE EVENTS.

Feb.	16—M.C.C. Smoking Concert.
,,	25—Sutton Coldfield A.C. Open Reliability Trial.
Mar.	18—M.C.C. Opening Run.
,,	18—B.M.C.R.C. first 1911 meeting at Brooklands.
,,	23—A.C.U. Annual General Meeting.
,,	25—Meeting at Brooklands.
Apr.	8—Oxford M.C.C. Open Hill Climb.
,,	14-17—M.C.C. London-Land's End Trial and Easter Tour.
,,	14-17—Herts County A.C. Harrogate Tour and Open Hill Climb near Harrogate.
,,	17—Westmorland M.C.C. Open Hill Climb on Shap Fell.
,,	22—A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,,	29—Bristol B. & M.C. Open Hill Climb.

R.A.C. Taxation Conference.

We have dealt at length with the proposals of the joint conference of the principal automobile organisations in our leading article on taxation. This subject was the principal item of discussion at the general meeting of the R.A.C. on the 9th inst., when practically every branch of the movement and almost every district of the country were represented. There is to be another meeting of the conference to consider the views of the various bodies represented upon it, and to settle the manner in which the final recommendations shall be laid before the Chancellor of the Exchequer.

American Champion's Visit to England.

Although, as we mentioned in last week's issue, Jacob de Rosier may leave the States for England next month, it must not be imagined that he is bringing that wonderful 32 h.p. motor with him. Indeed there is considerable mystery attached to it. Our New York correspondent recently had a personal talk with Mr. Hendee and Mr. Hedstrom, and the facts of the case are these: De Rosier was at the Indian factory, and saw one of the 32 h.p. aeroplane engines, and desired they would mount it in a frame and let him make some records, and there the matter ended! The main object of De Rosier's visit is to ride in the T.T. Race, but it is hoped that he will compete in the Auto Cycle Union international race meeting to be held on June 10th at Brooklands.

An Attempt on the Two Hours' Record.

F. A. McNab made a gallant attempt on the two hours' record at Brooklands Track last Saturday riding his 4 h.p. Trump-Jap. He started about half-past twelve and began reeling off the laps in splendid form. His best time for the lap was 2m. 55s. After about one and a half hour's running the machine fell off in power considerably, and McNab stopped to investigate matters. After a second attempt he found himself forced to give up owing to both piston rings being broken. His time for the fifty miles was 56m. 30.7s., and the distance covered in one hour was 53 miles 415 yards. McNab will try wider piston rings, and hopes to make another attempt this week. Major Lindsay Lloyd took the times by aid of the electrical timing apparatus.

F. A. McNAB'S ATTEMPT ON THE HOUR RECORD LAST SATURDAY.
McNab and some of his assistants, Baker-White, Spread, and Stuart, all on Trump-Japs.

An Organization Provi
Tariff for Repairs Thr

LIFE MEMBERSHIP TICKET OF 5/- ENTITLES YOU TO—

(1) Free Garage throughout the United Kingdom while on Tour or in the Town or District where you Permanently Reside.

. . This is being effected by the appointment of suitable Agents in every Town of the United Kingdom, who, on production of a Membership Ticket, will be pleased to provide Garage Accommodation absolutely free of charge. Only Agents are appointed who have the necessary facilities to execute repairs efficiently, and generally afford Members such services as may reasonably be required, except in Villages, where very often garage accommodation only is possible, no repairers being available.

(2) Standard Prices for Repairs by reliable Repairers.

. . A difficulty so often experienced is to ascertain the exact charge that will be made for repairs of different descriptions. In this connection the Company has prepared a list of standard charges based on a moderate scale for all likely repairs, which will be issued to each member so that he will know definitely what charge will be made by the Agent in whatever district he may be. When a charge for an unspecified repair is considered excessive, the Company will take up the matter, and if the complaint is reasonable, the excess charge will be refunded

(3) Reduced Cost of Accessories, etc.

. . The Company for various reasons, is often in a position to obtain such articles as, for instance, Clothing, Lamps, Horns, Plugs, Tools, etc., etc., at extraordinarily low prices. Such articles will be offered to Members, who will be able to purchase through any one of the Company's appointed Agents throughout the United Kingdom, or from the Company direct. The very fully equipped Accessory Department, to be opened shortly, will be at the service of Members, who can obtain any article listed in the catalogue at very special prices; but it must be understood that this does not apply to proprietary articles or to those the manufacturers of which have a price maintenance scheme in force.

(4) Advantageous Terms for obtaining Second-hand Motor Cycles.

. . The Company's position in the trade enables it to obtain high-class second-hand machines on particularly advantageous terms. Members will have the benefit of these facilities, and will be able to purchase machines either direct from the Company or from any of the Company's Agents throughout the United Kingdom, to whom the machines will be sent at the request of Members.

(5) Loans arranged on Motor Cycles.

. . For the convenience of Members, the Company will, when requested, grant loans on the security of Motor Cycles.

DOUGLAS &
Department has
pleasure in invit
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5/- only, which
pounds per annu

R.
J.
G.

BANKERS: Lond
SECRETARY & H

LIST OF AGEN
names, addresses, et
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THE ORIGINA
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To the Secretary,
DOUGLA
Dear Sir
dated Fe
Ticket, fo

Name (in full) .....

Signature .....

DOUGLAS & OLIVER Ld.

90 & 91, HIGH HOLBORN (near Kingsway) LONDON, W.C.

CONDS AGENCY, B'HAM.

ee Garage and a Standard the United Kingdom

D & O LTD

., whose Motor Cycle
triking success, have
Cyclist to take up a
Organization, costing
ng to them of many

MOTOR CYCLISTS in becoming members will form a powerfully collective body competent to effectually deal with any questions affecting their interests; and in this connection a Committee of Members is in course of formation, and the following gentlemen have consented to act subject to their election at a Meeting of Members to be held shortly, viz.:

W. COOPER, "Helmcroft," Pinner Road, Harrow.
C. C. COOKE, North Mimms, Hatfield, Herts.
A. H. COLLIVER, "Chaulden," Boxmoor.

he Members of the Board of the Company are:

, 176, Piccadilly, St. James, W. *(Chairman of the Rom Tyre & Rubber Co. Ltd.)*
"Rivermead," Wargrave, Henley-on-Thames.
Brooke Street, Holborn, London, E.C.

apital of the Company is £50,000

ank Ltd., Rosebery Avenue, E.C. *SOLICITORS: Wainwright, Pollock & Co. 1, Church Court,*
Horstead, 90-91, High Holborn, London, W.C. *Clement's Lane, London, E.C.*

is in course of issue giving
vn or district. The List will
ented from time to time.

or Life Membership is placed
clists may avail themselves of
the Board do not bind them-
which in the course of a short
scription.

THE USUAL DRAWBACKS to Societies solely dependent upon Subscriptions for the fulfilment of their programme are, as is well known, a lack of adequate funds and influence. The difficulties, however, are overcome in the Organization now established, as it has the backing and influence of Douglas & Oliver Ltd., who are paying substantial dividends to shareholders.

APPLICATIONS for Life Membership should be made on the accompanying Form, and forwarded to the Secretary as early as possible.

APPLICATION FORM.

LTD., 90 & 91, High Holborn, London, W.C.

self of the advantages of Membership, as advertised in "The Motor Cycle,"
se enrol my name as a Member, and forward to me a Life Membership
being payment for same.

Address .....

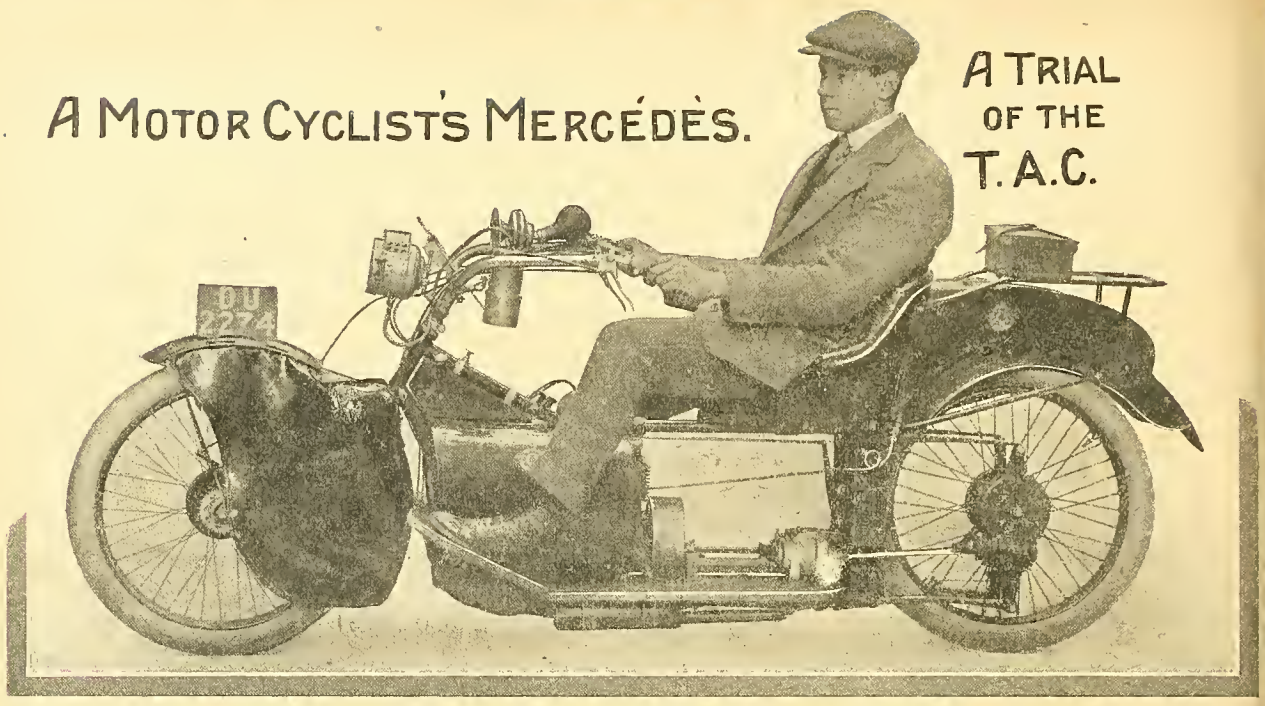
Date *1911*

Agents in Towns & Districts where not already represented are requested to communicate with the Secretary, stating fully their facilities for Repairs, Garage, etc.

In answering this advertisement it is desirable to mention "The Motor Cycle."

A MOTOR CYCLIST'S MERCÉDÈS.

A TRIAL OF THE T.A.C.



Clifford Wilson on the 6-7 h.p. T.A.C. he rode in the Quarterly Trial, and which was afterwards handed over to us.

OF late little has been heard of the four-cylinder T.A.C.—the car on two wheels—and, judging from the number of queries we receive from readers at home and abroad as to its merits, the performances of the two machines of this make in the January quarterly trials must have been watched very eagerly. It is now common knowledge that they acquitted themselves in first-rate style, accomplishing non-stop runs except for a stand dropping down on one of them. A separate department has recently been set aside in the Wilkinson Sword Co.'s works for the manufacture of T.A.C.'s, so that more is likely to be heard of these machines in the future.

A week or so ago we were accorded a trial of the identical mount Clifford Wilson rode in the quarterly trial, and must say that we enjoyed our novel experience. The 6-7 h.p. T.A.C. is an intensely fascinating machine, but not exactly an ideal mount for the novice. At least so we thought when we were being introduced one by one to the array of control levers, but after all it may have been strangeness that gave rise to such an impression, for after a 100 miles' run our bewilderment had vanished, and we felt quite accustomed to the control of the machine.

Easy Starting with Geared-up Lever.

A sharp pull of the starting lever, and the engine readily responded with a 2,000 r.p.m. buzz, the speed being kept down by judicious use of the handle-bar magneto cut-out. Having taken our seat, the clutch was disengaged, and the gear lever put in the third speed notch, and away the T.A.C. glided with all the ease and grace of a lordly car. Again the clutch was eased and the second gear engaged without difficulty, likewise the high ratio of 3½ to 1. All the time the machine was speedily gathering way there was a noticeable absence of effort or fuss so characteristic of a four-cylinder engine. At first the steering seemed heavy, the machine showing a decide inclination to make for the right, consequently w kept the engine well in hand at first, but eventuall after a spin of thirty miles or so, we succumbed the temptation of tasting the delights of speed. Ho comfortable the T.A.C. really is! This can readi be imagined when one considers the laminate springs provided fore and aft, the luxury of th upholstered bucket seat, and the even torque of th four-cylinder engine. Would that every motor bicyc were as comfortable as this one! The riding positi is extremely low, so low, in fact, that, coupled wi the unusual appearance of the machine, a crowd curious sightseers can be guaranteed to gather whe ever a stop is made, while the rising generati simply shriek with delight as the T.A.C. rider fl past. We had a similar experience with our A.C "Mighty Atom"—rather a peculiar coincidence th names being so similar.

The long footboards, inclined at the front. perm of a change of position, so that one need not g cramped on a ride, however long. The acceleratio powers of the machine are wonderful, the throtti and air levers can be opened with one fell swoo when the engine rapidly gathers way from a co parative crawl to a speed not far short of a mile minute. The sensation of riding this rakish 6 with its armchairlike riding position is altogeth different from any twin or single-cylinder machin There is a keen rush of wind in one's face, and th is all, for the purr of the exhaust is only ju audible, the gases being swept to the rear by a pi under the footboard.

Silent Valve Gear.

The exhaust valve lifter is particularly sweet action, there being a total absence of valve clatter descending hills with the lever raised. The worm dri

Motor Cyclist's Mercedes.—

ems to be thoroughly satisfactory, is silent, has a ean exterior appearance, and is unlikely to give ouble.

The mudgarding of the T.A.C. struck us as being etter carried out than on any machine we have ridden. will be seen from the illustration of the complete achine that the front wheel is half enclosed, effecvely preventing mud splashes reaching the front of ie machine, even if the wide footboards were nonistent. To prevent oil splashes reaching the rider's gs or the hot cylinders burning his trousers large iards are provided which serve their purpose admirbly. The encasing of the engine is completed by a eat under pan. The petrol compartment is over the ack wheel, and we must say that we were quite tonished at the low consumption. Our previous perience with four-cylinder machines of various akes has left us with a pronounced impression of a irsty appetite, but the 60 × 60 mm. T.A.C. with its and B. carburetter can boast nearly ninety miles the gallon. This economical result can be exained to some extent when we mention that the autoatic inlet valves are adjusted to open but a single llimetre.

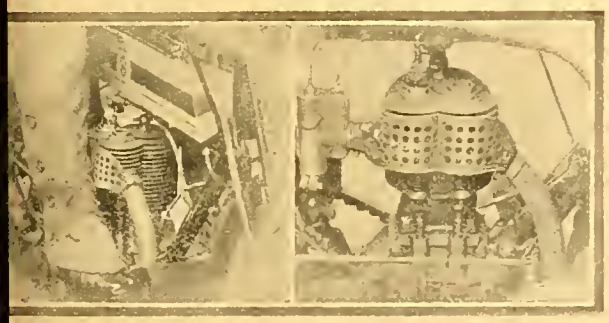
As regards braking power, we had not opportunities of trying the retarding effect of the brakes in traffic, as our brief run was confined to the main Holyhead Road, but Wilson, who kindly piloted us through the city, seemed to experience not the slightest difficulty in negotiating the intricate traffic of the Metropolis.

Ordinary Hills on 2nd and 3rd Speeds.

Fast hill-climbing is the chief delight of the average motor cyclist, and the sensation of gliding up gradients on top gear to the music of a well-tuned four-cylinder engine was indeed splendid. All ordinary hills can be climbed without changing, but on the second gear of 5½ to 1 the speed is by no means slow. The first gear we found no use for, but it should bring hills of the calibre of Chalk Pit and Amulree within the capacity of the T.A.C. Our riding experience has left us with an excellent impression of the qualities of this ambitious design of motor bicycle, and on returning the machine to the firm's representative we half whispered, "Oh for a lighter, shorter, and less powerful mount with such comfort!" which expression brought forth the retort that a lighter model on the same lines, but with shorter wheelbase, is already in its chrysalis stage.

ANOTHER TROUSER SHIELD.

The photographs reproduced below are those of a ovisionally patented trouser shield which is made d sold by H. Holt and Co., 68a, Regent Street, eamington. The illustrations are practically selfplanatory, but they only show one kind of clip for achment to carburetter and exhaust pipe. Telepic and lipped clips are also supplied, the former use when no round shoulders are available on the



The trouser guard referred to in the accompanying letterpress.

rburetter, when the clips are slipped over the cylinder ions and secured by the exhaust pipe nut and the rburetter. The "lipped" clips have projecting gues drilled for small screws, and are for use when shield is required to fit an old pattern engine. If essure is put upon the shield by the rider's leg it will ring back into its natural position. The shields are de of strong sheet metal, finished nickel-plated or nmetal, and prompt delivery can be made.

NOVEL DESIGN OF EXHAUST VALVE.

An exhaust valve for which great claims are made has been provisionally protected by Mr. William Smith, 2, Black Bull, Broughton, near Preston. Our illustration shows that the point aimed at is to protect that portion of the valve stem which is subjected to a stream of hot exhaust gases. This is done by casting a sleeve on the valve head, which forms a cavity overlapping the guide three-eighths of an inch. Another claim for the same device is that it protects the stem from cold air which is drawn into the exhaust port through the guide.

We must say that the claims are hardly substantiated in theory, although we are assured in practice that the valve has entirely eliminated the trouble of valve breakages on several machines. The disadvantages, in our opinion, are that the stem is greatly increased in size at a point where it should be as small as possible to allow free egress of exhaust, and the larger body of metal should retain the heat longer than a thin stem. Any tendency there may be to induce cold air *via* the guide should tend to keep the stem cool, although this will only take place to any extent if the stem and guide are unduly worn. It must be understood that our criticism is based purely on theory, as we have had no opportunity of trying one of the valves, and it is quite reasonable to believe that the advantage of keeping the stem cool overcomes the disadvantages mentioned.

THE MOTOR CYCLE"
PECIAL SPRING NUMBER

will be published on Thursday, March 23rd. Special features will be introduced, and the illustrations will be numerous and original.

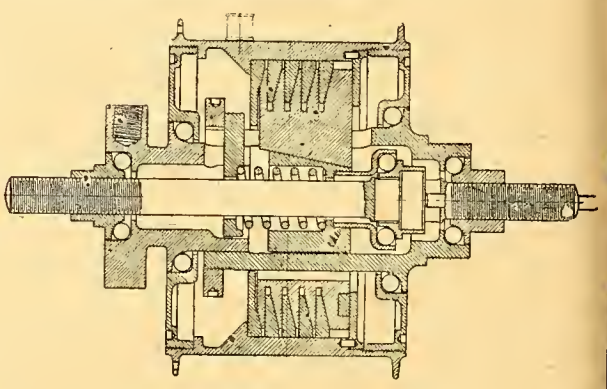
SUTTON COLDFIELD A.C. OPEN RELIABILITY TRIAL.

This trial (announced in these pages last week) being the first of its kind to be promoted by a Midland Club, takes place on February 25th (Saturday), and is already creating a great deal of interest. The competition is for the Colmore Cup, kindly presented by Mr. F. S. Whitworth, which will be awarded to the competitor making the best performance throughout the day, whilst silver medals will be awarded to all those making non-stops. The course is about 125 miles in length, a start being made from a point on the outskirts of Birmingham at 9.30 a.m. Some well-known Midland test hills will have to be negotiated, such as Edge Hills, Rose Hill, Warmington, and Sun Rising, while the two latter will have to be descended as well as ascended. The luncheon stop will be made at Banbury.

The rules and regulations are now quite ready, and will be sent, together with entry forms, on application to Mr. James St. John, 33, Fountain Road, Edgbaston, Birmingham. Entrance fee for members is 5s.; non-members, 7s. 6d.

PREMIER FREE ENGINE HUB CLUTCH.

The line section is of the free engine device used on 1911 pattern Premier motor cycles. It will be seen that around the ordinary hub there is a shell (spoked to which is the road wheel) running on ball bearings mounted on the former. Anchored to this shell are four hardened steel plates, and frictional contact between the hub proper and the shell is obtained by expanding the three-section phosphor bronze inner member outwards. The belt rim is, of course, mounted on the hub proper. To obtain the maximum amount of frictional surface the inner member has V-shaped grooves. The cone which expands the clutch is held in engagement by a strong spring. When this is released by the actuating rod, which works through the centre of the spindle, the clutch members are positively drawn out of engagement, allowing the belt rim to run perfectly free on ball bearings. A Bowden lever on the handle-bar is used to operate the clutch, which method of control has the advantage of allowing the rider to use both feet to steady himself in starting from a standstill, or even in slightly assisting the engine to pick up the load. The Premier clutch allows of a very gradual engagement; in fact, if the clutch lever be released suddenly, the plates are found to take up the drive gradually and with an absence of shock or jar.



CLUB NEWS.

Cambridgeshire M.C.C.

Members assembled in large numbers at the annual general meeting at Ye Olde Castle Hotel, Cambridge, on the 6th inst., and the interest and enthusiasm displayed augurs well for future success. The club is a comparatively young one, but has now nearly seventy members.

Oxford M.C.C.

The membership has now reached 100, thirteen having been elected during the past two weeks. To celebrate this, a musical evening will be held at Morris's Garage, Holywell, on Tuesday next, the 21st inst., to be preceded by a breakdown competition at 7.30 p.m. The first road competition this season will be a members' hill-climb on March 11th.

Scarborough and District M.C.

On Wednesday next, the 22nd inst., at 7.30 p.m., Mr. J. L. Norton has kindly consented to deliver a lecture to the members on "Four and Two-stroke Motors Compared." The annual general meeting and prize distribution is fixed for the 28th inst., at 8 p.m., in the new club rooms, 38b, Falsgrave, Scarborough. At the last committee meeting twenty-four new members were elected, making the total membership 100, an increase of sixty for the year. New club quarters with a large garage have been taken, also billiard and committee rooms, which are comfortably furnished. The annual subscription is 7s. 6d.

York County M.C.C.

The annual general meeting was held on the 3rd inst., when it was resolved that, in addition to the twenty-four hours' run to Edinburgh and back, there should be a two days' outing to the same city, the idea being to start early on Saturday morning from Leeds, arriving in Edinburgh in the afternoon, and to start for home again next day, the machines meanwhile to be sealed.

It was also decided to have a club night at headquarters on the first Friday in each month at 8 p.m. The chief officials elected for the year were: President, Dr. M. Hughes; vice-presidents, Dr. Deane (Dewsbury) and Dr. Money (South Kirkby); trials hon. secretary, Mr. H. Wilkinson; hon. solicitor, Mr. F. Stewart Watts (Dewsbury); hon. secretary and treasurer, Mr. W. E. Asquith.

Scottish Border M.C.C.

A general meeting will be held on Saturday next, the 18th inst., in the small hall, Municipal Buildings, Hawick, at 4 o'clock. Prospective members are asked to communicate with the hon. sec., Tom Gillies, Hawick, before that date. The subscription for this year is 5s.

A Suggested Club for Suffolk.

Mr. T. Percival Powell, 3, Princes Road, Felixstowe, is of the opinion that there is need for a motor cycle club in the Ipswich district. He suggests calling the club "The Ipswich and District Motor Cycle Club." Motor cyclists living in the locality who are interested are requested to write him.

Cambridge University M.C.C.

A general meeting was held on Friday last to consider the refounding of this club, the old club having died a natural death. The chairman, Mr. J. M. Oakey, having announced the birth of the new club, the meeting proceeded to the election of officers. The following were elected: President, Mr. J. M. Oakey; secretary, Mr. R. C. B. Gardner; treasurer, Mr. J. W. Cox; committee, Messrs. N. Gray, C. W. Bower, I. C. Maxwell, and G. B. S. McBain. The club proposes to affiliate with the A.C.U. and to hold a fifty miles reliability trial on February 22nd and a hill-climb towards the end of term. The subscription to the club was fixed at 2s. 6d. per term, with an entrance fee of 2s. 6d.

Lincolnshire A.C (Motor Cycle Section).

A meeting of the above section of the Lincolnshire Automobile Club was held at the Spread Eagle Hotel, Lincoln, on the 8th inst., the business being the election of members and committee, and consideration of programme. The attendance was large, members journeying from all parts. Twenty-eight members were enrolled. A hill-climb was decided upon as the opening event of the year, to take place on Easter Monday, and Waddington Hill (about four miles from Lincoln) was chosen as the venue. Suggestions for other interesting events were then discussed, and there is every prospect of a most successful season's work being carried out. All wishing to join should communicate with the hon. sec., Mr. W. Howell Quine, Park Dale, St. Catherines, Lincoln.

Club News.—

Redditch and District M.C.C.

A general meeting will be held to-day (Thursday), at 8 p.m., at the Unicorn Hotel

Derby and District M.C.C.

A supper and smoking concert will be held at headquarters, St. James Hotel, on Wednesday next, 22nd inst. Tickets 2s. 6d. each.

Motor Cycle Club for Southend-on-Sea.

A new club is being formed for riders in the district of Southend-on-Sea. Prospective members should apply to the hon. sec., H. W. Miller, Pembroke Lodge, Heygate Avenue, Southend-on-Sea. It is proposed to affiliate to the A.C.U.

New Motor Cycle Club in Brighton.

A meeting will be held at the King and Queen Hotel, Marlborough Place, Brighton, at 8.30 p.m., on Tuesday, the 21st inst., to consider the formation of a motor cycle club. The chief objects of the club are to be affiliation to the A.C.U., the holding of competitions, and to foster the sport and safeguard the interests of motor cyclists generally. All interested in the formation of such a club should not fail to attend the meeting.

Winchester and District M.C.C.

The A.G.M. was held at the Royal Hotel, Winchester, on the 7th inst., when a large number of members attended. A good number of interesting events were arranged for this year. The question of the formation of a Hampshire County Club, by the amalgamation of the clubs now existing in the district, was discussed. A meeting of representatives of the clubs in Hants was fixed to take place at the Royal Hotel, Winchester, last Tuesday evening.

Torbay and District M.C.C.

A number of enthusiastic members met for the first official quarterly meeting at headquarters. A programme of fixtures for the season was adopted. Among other events of interest, it is proposed to hold in the summer, motor sports and gymkhana in Torquay, and a West of England meet of motor cyclists. Five new members were enrolled. The secretary is Mr. A. Powell, 37, Fleet Street. The opening meet will take place on the 19th inst., at 11 o'clock, at the recreation ground entrance.

Harrogate and District M.C.C.

This club held a very enjoyable and instructive evening on Thursday, February 9th, when an impromptu debate was held on various subjects submitted by members present, which were drawn from a hat, and the drawer had five minutes in which to answer the question. The questions covered a wide field of enquiry, and gave plenty of scope for animated discussion. The Harrogate and District Automobile Club and the Harrogate and District M.C.C. are holding a combined demonstration and illustrated lecture on "internal combustion engines as applied to motor vehicles and cycles" on Thursday, February 23rd, to which motor cyclists in the district are invited, provided they write the hon. sec. as to their intentions previous to the date.

Nottingham and District M.C.C.

The annual general meeting was held at headquarters, the Welbeck Hotel, on Saturday, February 4th. The chairman (Mr. J. Elliott Littlewood) presided, and, after the report on the year's work had been read and confirmed, the meeting proceeded to the election of officers as follows: President, Lord Henry Bentinck; vice-presidents, Captain A. A. Morrison, Captain R. H. Bagnall Wild, R.E., Messrs. Harold H. Bowden, F. W. Johnson, Joseph Truman, G. Claude Cuthbert, and Dr. Adam Fulton; hon. solicitor, Mr. C. A. Young; captain, Mr. George Brough; vice-captains, Messrs. Reginald Massey and A. E. Lole; hon. secretary, Mr. John King, assistant hon. secretary, Mr. B. H. Tatham; hon. treasurer, Mr. Charles H. Sewell; hon. auditors, Mr. C. Bertram Hibbert and Mr. J. Simmonds. The committee consists of ten.

A vote of sympathy to Mr. C. A. A. Spring, the ex-hon. secretary, in his long-continued illness, was carried unanimously, the members also expressing their wishes for his speedy recovery. A hearty vote of thanks was tendered to the retiring officers.

Liverpool A.C.C.

A meeting will be held on the 27th inst., at the Bee Hotel, Liverpool, at 8 p.m. The committee will be pleased to see any motor cyclists who are interested.

Cork and District M.C.C.

At the annual general meeting of this club a number of competitions were arranged for this year, chief amongst which are the following: March 17th, reliability trial, Killarney and back; April 14th, speed-judging and consumption trials; April 17th, reliability trial, Gangane Barra and back; May 24th, hill-climb; June 5th, reliability trial, Waterford and back; June 22nd, reliability trial, Goleen and back; July 2nd, hill-climb; August 7th, reliability trial, Limerick and back; August 27th, hill-climb. At the meeting at which these events were fixed the new officers for the season were elected. Mr. R. S. Russell, 4, Prince's Street, Cork, was appointed hon. sec., and Mr. L. Dobbin, jun., hon. treasurer.

Motor Cycling Club.

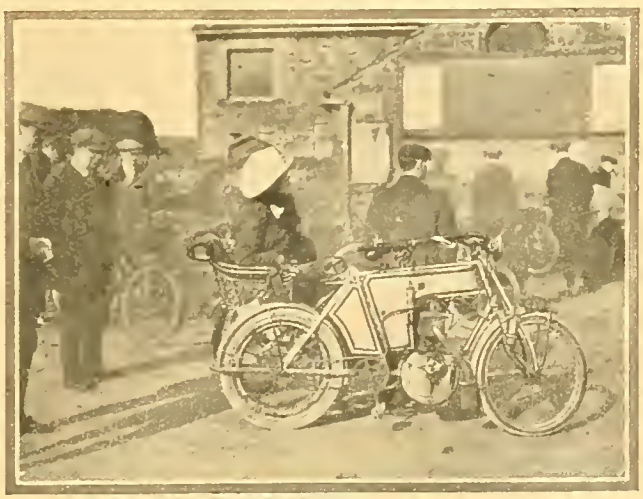
The opening run to Brighton is on Saturday, April 1st. Headquarters at Old Ship Hotel. Dinner has been fixed for 7 p.m., after which the gold and silver medals won by the successful competitors in the London-Exeter and back winter competition will be presented by the president. A special medal of a new and appropriate design is being specially struck by order of the committee. A concert has been arranged, and Mr. J. Van Hooydonk will present lantern pictures of interesting and amusing events of club life. Next day a press photograph will be taken at 11 a.m.; also a special photograph of the Exeter run survivors. Lunch at 1.30 p.m. at Burford Bridge, near Dorking. As the sleeping accommodation at the Old Ship is limited, early application for bedrooms should be made to the captain, F. J. Jenkins, 35, Loveday Road, Ealing.

Exeter and District M.C.C.

Henceforth the club will elect its captain every month. The captain will select his vice-captain. Captain and vice-captain will, as heretofore, sit on the executive committee. Unless he be re-elected, or unless he already be a member of the committee as elected at the A.G.M. in January, the captain will vacate his seat on the committee at the expiration of his term of office.

Henceforth the committee will meet at 6.15 p.m. on the last Friday in every month.

There will be an informal general meeting at 6.15 p.m. on the first Friday in every month. Accordingly the committee will meet on the 24th inst., and the informal general meeting will be held on March 2nd. Members who were absent from the A.G.M. on January 20th will notice that the club's new headquarters are at the Exeter Garage Co.'s premises, Paris Street, Exeter. The club is selecting a team of nine riders to meet the Bristol B. and M.C. at Taunton on Saturday next, the 18th inst.



An old 3½ h.p. Rex which has pulled a sidecar up the hills around Sheffield for the last six years. The scene is Door Moor Inn, a favourite meeting place of Sheffield motor cyclists.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Easy Starting. Horse Power for Sidecar Work.

(1.) Kindly tell me of any method of easy starting for a Zenith-Gradua. (2.) I would be glad to know which h.p. you would advise for sidecar work, Bat-Jap, with P. and M. gear, 5-6 or 7-8? Total load, 18st. Would the 7-8 h.p. be much more expensive for running, petrol, and tyres, and would the ordinary motor cycle licence (£1 1s.) cover the 7-8 h.p. machine, as I see the limit for smallest car is 6½ h.p.?—LAZY.

(1.) Lower the gear almost to the limit and walk alongside, when there will be no difficulty in starting if all is in order, owing to the comparatively high engine revolutions. (2.) Unless you are proposing to tour in excessively hilly country a 5-6 h.p. engine should be large enough for your weights. Although faster, the larger engine would cost a good deal more as regards petrol, tyres, etc. The one guinea licence would cover either of the combinations, as they are motor cycles within the meaning of the Act.

Claim for Damages by Owner of a Dog.

Whilst out riding my Triumph I had the misfortune to run partially over a small dog, and, of course, at the same time, narrowly missed a nasty fall in consequence. I was at the time only proceeding at nine or ten miles an hour (speedometer on handlebar) round a fairly sharp curve in a country lane. Whilst on this curve a small terrier dog rushed out at me—the usual every day occurrence!—and as it was a case of myself or the dog—well, he lost! I managed to keep the cycle going (so did not go over the animal, but really pushed it out of my track), and thinking I had been lucky in not coming off worse, proceeded on my journey. The owner has written claiming damages and all expenses he may incur in connection with the matter. Has he any legal claim against me?—F.J.K.C.

Our legal adviser states that "the owner of the dog has no claim against the motor cyclist unless it can be proved that he was riding negligently, which does not appear to have been the case. On the other side the law as to the liability of the owner of the dog to pay any damage sustained by the motor cyclist is in a rather doubtful state at present, but it is fairly clear that he would not be liable unless he knew of the mischievous propensities of the particular dog, and not then if the motor cyclist could by riding carefully have avoided the collision."

New Piston Rings.

Some few months ago I thought it advisable to fit two new (not three) piston rings to my four-year old machine, and these, with one old one, improved compression considerably. Many times since all three rings have succeeded in getting their openings well nigh together, thus reducing compression almost half, and making steep hills rather difficult to surmount. I have just taken off the cylinder, partly removed the piston rings, and in the piston ring grooves rubbed a mixture of very thick motor (gear box) grease mixed with a very small portion of finest black lead. Will you advise me whether this is a safe mixture and likely to stop the trouble, or whether you would suggest having the rings pinned?—J.M.L.

The trouble is doubtless caused by the grooves in the piston not having been turned to suit the new rings. You must understand that when the rings wear, the grooves wear also, and they do not wear parallel from top to bottom of the groove. What you ought to have done with your piston was to have had the grooves turned out and new rings fitted slightly wider than the old ones. We are afraid that the mixture you speak about will interfere with the proper expansion of the rings which is necessary to retain good compression. If there is room you can certainly have the rings pinned, but we should recommend the piston to be altered as stated.

THE WIZARD INN, CHESHIRE.

Those riders who frequent the district round about Alderly Edge will learn with regret that the licence of this house is to lapse in a few weeks. Situate amidst splendid woods, beautiful scenery, interesting caves adjacent to places where some of the finest views of Cheshire can be obtained, and having possessed a licence for the past 200 years, no wonder it has become one of the most frequented and famous wayside hostelries in the county.

Auxiliary Exhaust Ports. Clutches. Small Magnetos.

I shall be much obliged for your advice: (1.) Is there any serious objection to drilling a cylinder to provide auxiliary exhaust provided a proper exhaust pipe is fitted? Is it desirable to drill several small holes rather than one large one? (2) Is it permissible to use metal to metal in an ordinary cone clutch? If so, what metals are usually used? Would metal to metal be likely to increase the gripping power of the clutch, which at present is fibre to metal? (3.) Why are specially small magnetos practicable for lightweights? Would they not answer just as well for higher powered machines instead of using heavier magnetos?—MEDIUM POWER.

1.) The chief objection is that the oil escapes very rapidly, and drenches the rider's legs and the whole of the machine with oil. Another thing, the engine fires intermittently at slow speeds, as the mixture is not regular without some sort of automatic valve as used on the 1911 Premier. It is better to have several holes, as one large hole may weaken the cylinder unless designed to suit it. (2.) It would hardly be permissible to use a metal to metal clutch with a single gear unless it were enclosed, say, in the hub and ran in oil. Why not try a leather to metal unless the clutch is too small, when the best way would be to fit a good plate clutch. (3.) The disadvantage of small magnets is that they render the machine more difficult to start. This, however, is hardly noticeable with a lightweight, as such machines are geared lower, and consequently make up for any loss in this respect by rotating the armature faster.

A Worn Chain.

I ride a 3½ h.p. two-speed, chain-driven motor cycle with sidecar, and occasionally, especially in muddy weather, the chain comes off. After replacing and adjusting the chain, I am troubled with bad running, and the chain is abnormally tight in some places and loose in others. The machine does not run smoothly, and fails on hills. After a time the chain gradually works all right again. Can anything be done to remedy the trouble immediately after its occurrence?—T.F.B.

It looks very much as if the sprockets and chains were badly worn and need to be replaced. Of course, an excessive amount of mud might cause the same symptoms, and in this case all you can do is to fit some sort of chain guard.

Horse Power. Lift of Exhaust Valve.

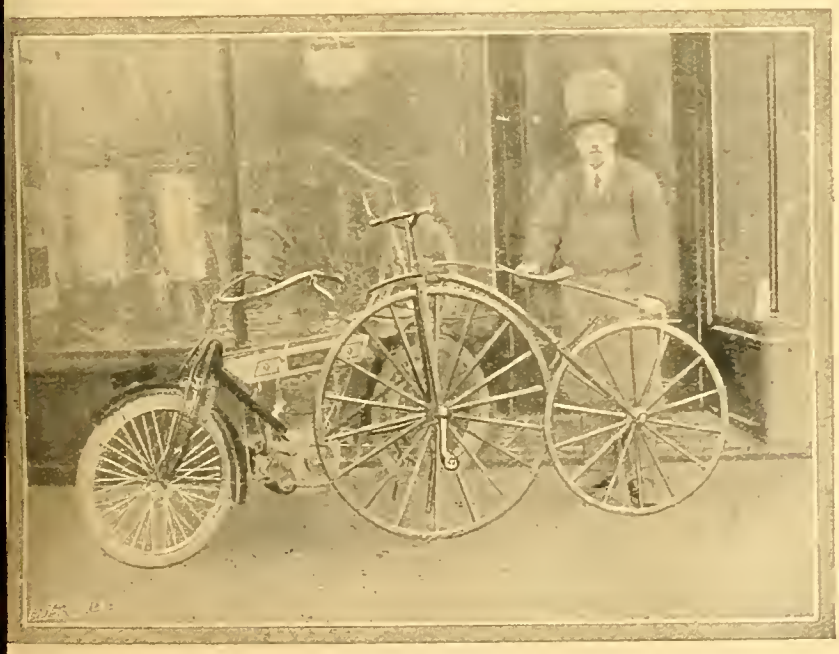
(1.) How do you work out the h.p. of an engine? Mine has a bore of 80 mm., stroke 90 mm., and is a White and Poppe. (2.) The exhaust valve only rises just over ⅛in. I had a new cam from the makers, but this made no difference. Do you think this opening enough?—T.H.

(1.) The horse-power quoted by makers is merely nominal. Your engine (which, by the way, is either 80 × 85 mm. or 85 × 85 mm.) was rated at 3½ h.p. by the makers, but would actually give nearer 5 h.p. if in proper running order. A fairly reliable rule for finding the brake horse-power of an engine is to square the radius of the cylinder in centimetres, multiply by stroke in centimetres, and multiply by the number of revolutions per minute, say 1,800. Now divide the result by 1,000, again dividing the quotient by 75. (2.) The exhaust valve certainly does not seem to lift enough. Probably you have not detected that there is too much clearance between valve stem and tappet rod, which would, of course, reduce lift of valve. The usual lift is $\frac{3}{16}$in. to ¼in., but some makers prefer a small valve with a big lift and some a large valve with less lift.

Disadvantages of the Shaft Drive.

I should be obliged if you could give advice as under: (1.) What is the disadvantage of a shaft-driven motor bicycle? Its advantages are obvious, but is it true that it is liable to wear badly on rough roads, etc.? (2.) Does the system of a two-speed gear such as the P. and M. entail a great deal more detailed cleaning and attention than the enclosed gear such as fitted to the Humber? (3.) Is automatic lubrication trustworthy?—S.J.S.

(1.) In the case of a single or twin-cylinder engine not provided with some slipping medium such as a clutch or spring drive, the impulses of the engine are felt more than with a belt transmission. It is liable to wear out the cover on the driving wheel slightly quicker. It is not more liable to wear on rough roads than smooth roads. That is to say, not more liable to do so than machines with other systems of transmission. (2.) An unprotected chain transmission would probably require slightly more cleaning than a belt-driven machine with enclosed gear in the rear hub. (3.) It depends what type of automatic lubrication you refer to. If it is automatic by means of a gear-driven pump, then the feed is entirely mechanical, but if it depends on a drip feed, differences in temperature affect the viscosity of the oil, and the rider's attention is required so to regulate the needle valve that a constant and regular flow of oil is obtained.



EXTREMES MEET.

The old style and the new. One is a bicycle made in France 64 years ago, the other a 1911 Bradbury.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"A.Y." (Leicester). Whittle belts on a Triumph motor cycle.

"C.W." (Warrington). Mabon clutch or Millennium gear fitted to 1908 Triumph.

"H.E.R." (Pentevedra). F.N. (four-cylinder) with and without sidecar, also F.N. two-speed gear.

"H.W.P." (Tottenham). Acetylene gas generators in which granulated carbide is dropped into the water.

"E.H." (Harrogate). Lincoln Elk, its climbing with a sidecar.

"F.M.L." (Birmingham). Decarbonisers. Are they effective on motor cycle engines?

"F.S." (Lymington). 5 h.p. 1910 Rex de Luxe, particularly as regards reliability of engine and change-speed reliability of engine and gear.

"A.F.S." (Swansea). L.M.C. variable pulley and N.S.U. and Fit-all two-speed gears with 3½ h.p. sidecar.

"L.B. 3980." 4½ h.p. Fafnir engine

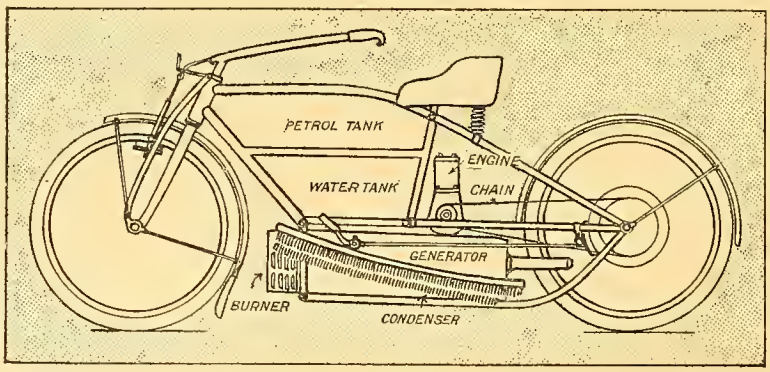
The Motor Cycle Steamer.

IS IT A COMMERCIAL PROPOSITION?

LIKE many others I have read the articles and opinions of readers in favour of steam propelled motor cycles with great interest, and as a steam enthusiast who is continually giving this matter his attention, I do not agree that a steam bicycle is impossible. The sidecar idea suggested some weeks ago by one correspondent strikes me as being such a clumsy way of doing things that it could scarcely hope to have a future. If one is going to have a non-passenger-carrying three-wheeler, one would, in my opinion, do better to add a wheel and the trifling complication of a differential gear, and obtain a two-seater quadricycle, in which case the steam plant could be far better accommodated than in the sidecar arrangement suggested. For instance, large flexible steam pipes would not be necessary, and I am strongly of the opinion that if the latter were used they would give endless trouble.

A Single Tracker Possible.

But I look upon the same correspondent's contention that a steam-driven single tracker is out of the question as a distinct begging of that very question, and I would very much like to know why this arrangement should be so impossible. Personally, I am convinced that it is not only possible, but decidedly practical, the real questions at issue being whether there be any demand for a steam bicycle, and whether, if such a machine were marketed, its advantages, in the eyes of the petrol engine user, would outweigh its disadvantages.



Suggested design for a steam-propelled motor cycle, particulars of which are given in the accompanying article.

Taking the objections first, the principal ones seem to be that the steam engine is inherently messy, that the inevitable heat is inconvenient and difficult to get rid of, and that sufficient water for anything like a long run weighs a very considerable amount. The first claim wants, I think, a little qualification, because those who have had both steam and petrol experience are practically agreed that a steam plant is no more messy than a petrol engine, when both are treated with equal care and understanding. As a matter of fact, either can be made by careless handling as messy as anything could very well be.

As to getting rid of the heat, surely this is an imaginary disadvantage, since it is obvious that, so far as the generator is concerned, it is heat that is wanted, and the greatest possible care should be taken to retain it in its entirety. The necessity for getting rid of the products of combustion implies an inevitable waste of heat; but there is no reason whatever why this egress should cause any more inconvenience than the exhaust of a petrol engine.

I am not surprised that one reader should mention thirty miles as the non-stop limit for the water capacity of a steam bicycle, in view of the fact that he suggests a fire-tube wet-steam boiler, which surely no one would defend as a factor in a rational two-wheeler. There would, of course, be a condenser, situated somewhere behind the rider. Its weight would be distinctly appreciable, but it is absolutely indispensable, and would more than pay for its weight by reducing the volume of water to be carried.

As to the advantages of steam, these can all be classed under one heading—flexibility—which, it cannot be too strongly emphasised, cannot be possessed even to the slightest degree by any explosion engine as we know it now. Silence and smoothness have also been mentioned, but anyone who has ridden a Scott motor cycle will, I think, agree that one can have as much as one wants of either of these without steam.

It has also been said that steam would do away with carburetter troubles, but this is not really so, as it is merely a case of exchanging one form of carburetter for another, as the petrol or paraffin has certainly to be "carburetted" to supply the burner flame, and as much delicate handling is required to get economic fuel consumption in either case.

Not one of the opimons hitherto published have, I am surprised to see, touched upon the real disadvantage of steam as compared with the explosion engine, namely, its inherent inefficiency. With steam one loses energy at the burner through bad vaporisation, at the boiler, at the engine, and at the condenser through radiation of heat, and in the engine and pump through friction. In the petrol engine energy is lost in the form of bad carburation—but I doubt if the best of burners is as efficient as a good modern carburetter—at the engine by radiation and by friction; but the last two losses are incomparably smaller than those in the steam engine.

Hence the steam engine can never hope to be as economical as the explosion engine using the same

Motor Cycle Steamer.—

l, because, whilst in both cases the chemical energy the fuel is changed into the kinetic energy of the gine, the steam plant accomplishes the transforma- n in two steps against the other's one.

t is all very well to talk glibly about making steam il one comes to the foot of a hill, and then rushing it as if it did not exist, but this sort of thing ans very heavy fuel consumption. A 5 h.p. steam gine can easily be induced to give 10 h.p. by simply ubling the steam pressure, but the fuel consump- n is at least doubled, too.

I hear somebody say that paraffin will, of course, be d for fuel on the steam motor cycle. Why, then, t not used on all steam cars if it be so much cheaper l better? One can only sniff reminiscently, and mit that the paraffin burner which is efficient with- t being messy or smelly has not yet put in an pearance.

The Starting Difficulty.

And then, again, how about stoppages? One could turn the burner right "out" for a ten-minute call, l unless one did so one would have to keep a pilot ne going. Also with the steam bicycle it would be possible to take the machine out of the garage l be sailing off in less than a minute. No, it would cessitate at least a ten minutes delay for the steam ge to go over.

Now I have said that I think a two-wheeler is prac- ble, but the reasons I have outlined above are te sufficient to persuade me that it will never be a cessful commercial proposition. Still I must justify claim to practicability by making suggestions.

First of all I will mention that Professor S. P. ngley drove his experimental aeroplane—practically first heavier-than-air machine to fly successfully was a model of 15ft. spread, and flew a mile and alf) with a 1½ b.h.p. steam engine, which complete ighed only 7 lbs., 2 lbs. of which was fuel for a of two minutes or so.

This engine had no condenser, of course, but was thoroughly reliable little outfit, the working pres- e being 150 lbs., and the boiler a plain helically-coiled steel tube. Now it is quite safe to say that a 5 h.p. plant complete with fuel for 100 miles run, water and condenser, could be made at a less weight than 100 lbs., because the volume of water to be carried would not need to be above a couple of gallons, and the petrol would not have to exceed 2½ gallons.

Hence we may assume that the whole machine need not weigh more than 180 lbs. all on, which is, after all, no heavier than a standard 500 c.c. petrol engined motor bicycle. The engine would be a double-cylinder, single-acting, side-by-side type, with piston or poppet valves, and with a bore and stroke of 1½in. by 2in. It would have an enclosed crank chamber. As the cranks would be at 180°, there would be a dead centre, but an external mark indicating the position of the cranks could easily be made, and before opening the throttle the machine could be pushed along an inch or so until the dead centre was passed.

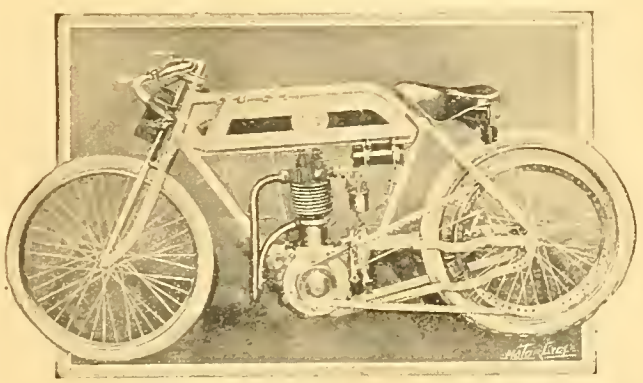
Why anyone should want a V type engine I cannot say. Embodied in the engine would be a small water pump. For the boiler I would suggest six long horizontal helical coils of steel tube, with as many long tongues of flame playing through them. If arranged as shown in the sketch with the burner in front and two side by side chimneys behind so as to miss the tyre, the exhaust gases would be easily got rid of. The engine might well be put in the old Ormonde position, where the rider would help to screen it from the draught, but it would have to be boxed in as much as possible. It would drive the back wheel by a chain. The condenser might be stowed under the footboards, which would be inclined as shown.

I am convinced that there is nothing impractical in such a machine as I have outlined, and were I blessed with a sufficiency of spare time and cash I would certainly build it. But I would do so with the full knowledge that if I were going to have a luxuriously comfortable machine I should certainly have to pay for it in fuel consumption. Anybody who has studied the question at all deeply knows that the cost of running a steam propelled cycle would be much greater than that of a petrol-driven machine of equal power.

But it is a real pity that no experimental machines have been constructed. W.G.A.

A 1911 TRUMP-JAP RACER.

THE machine illustrated is a 4 h.p. Trump-Jap, fitted with overhead valves, auxiliary exhaust ports, and ball bearing mainshaft bearings, ilt by F. A. McNab for racing during the year. he tank has been made specially for long distances, d holds two and a half gallons of petrol and three- arters of a gallon of lubricating oil. The ignition by Hellesen dry batteries and plain coil. The weight the machine is about 148 lbs. It is interesting to te that the auxiliary exhaust ports have been fitted ith an aluminium cover, so that the machine can be ed in Tourist Trophy competitions. This cover is an ltight fit on the cylinder, and the engine is thus kept rfectly clean. Another interesting feature is that e handles are arranged so that the rider's hands are from of the steering head. This, McNab has und, t. rendered the steering steady at all speeds. the way, it is known that McNab has an eye on odfrey's one hour record, created on a 3½ h.p. Rex far back as November, 1909, so we may hear of the Trump being put through its paces very shortly. It is worthy of note that, despite several onslaughts, Godfrey's figures have stood for fifteen months.



4 h.p. Trump-Jap which F. A. McNab will use in racing events this year.

British Made Bosch Magnetos.

The Bosch Magneto Co., Ltd., inform us that if at any time a motor cyclist expressly desires an English-made magneto for competition purposes, the company would be happy to supply one.

Lamps at the Manchester Show.

It is hoped to have a good display of F.R.S. lamps at the Manchester Show, but it is not yet decided on whose stand they will be exhibited.

Dunlop Belts in Competition.

The Dunlop Rubber Co., Ltd., Aston, Birmingham, have sent us a list of successes achieved by users of this belt. Although only recently introduced, the Dunlop belts have become very popular.

A Double Purpose Spanner.

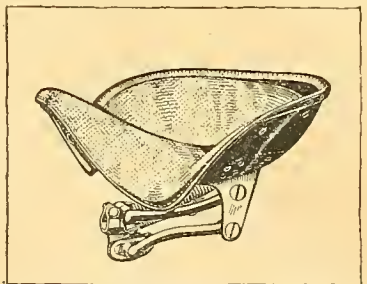
Messrs. J. C. Lyell and Co., Ltd., 113, Great Portland Street, W., have taken up the sale of the Heming spanner, which was illustrated in our issue of December 15th, 1910, page 1263. The spanner in question was exhibited at the Paris Show. It possesses the advantage of being capable of being used on round tubes or nuts.

Sidecars at Popular Prices.

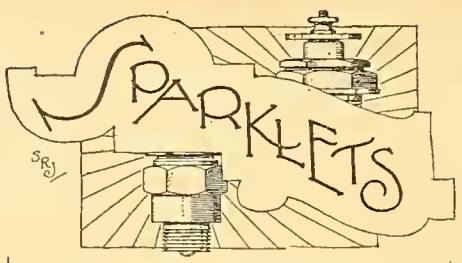
A serviceable sidecar attachment sold at a remarkably low figure is the one lately introduced by E. A. Gorton and Co. The frames are of best weldless steel tubing, the axle 1⅛in. × 14 gauge; also the side member running parallel with motor cycle is of 14 gauge; the other tubes are all 16 gauge. The springs are high-grade spring steel hardened and tempered. All the frames are tested with a special rust preventive. A feature of the Gorton sidecar is that the seat is brought well forward, so that the passenger sits in a line with the driver. The arrangement is found to simplify the steering as well as being more comfortable and rendering conversation an easy matter. Gorton sidecars are made in five different models, all of the rigid pattern, and an illustrated price list may be obtained from the makers at Gosford Street, Coventry.

Combined Seat and Back Rest.

The makers of the Xl'all anatomical seat, whose address is 6-7, Moseley Street, Birmingham, have just introduced an entirely new pattern combined pan seat with a low back-rest. The springwork and padding are identical



with that of the Xl'all saddle, the novelty being the addition of the back-rest. This does not stand any higher than an ordinary sized parcel that is likely to be placed on the rear carrier, so that the rider can easily clear the projection when dismounting.

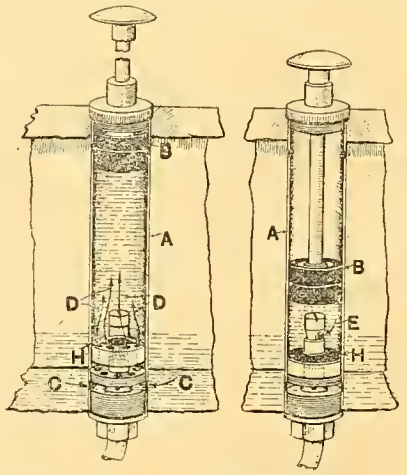


Manchester Trade Appointment.

Mr. C. E. Kettle, a well-known Manchester motor cyclist and competition rider has joined the firm of Lookers, Ltd., Hardman Street Garage, Manchester, and will take charge of this firm's motor cycle department.

An Ingenious Tapless Oil Pump.

Mr. E. C. Middleton, of Coventry, is the patentee, and Messrs. Rotherham and Sons, Ltd., also of Coventry, are the makers of a clever tapless oil pump which is illustrated herewith. The barrel of the pump communicates with the oil in the tank by means of



Middleton's Oil Pump.

A. Barrel. B. Plunger. C. Oil leaving tank.
D. Oil entering barrel.
E. Oil leaving barrel on its way to the engine.
H. Leather non-return valve washer.

the holes C; when the plunger is drawn up the oil flows through the holes and past the non-return leather valve. So far this does not differ from other tapless pumps, but once the oil is in the barrel it cannot escape either back to the tank or down the pipe into the engine unless pressure is applied to the handle. When the rider presses on the handle the oil in the barrel exerts a force on the top of the leather valve, and tends to keep it firmly closed, but the portion on which the leather fits moves downwards by the same pressure of the oil and opens a conical valve just above it which allows for the escape of the oil to the crank case. The moment this pressure is released the conical valve closes by aid of a spring, and the pump is ready to receive a fresh charge *via* the leather non-return valve. The idea is extremely simple, and it is almost impossible for it to get out of order.

Catalogues Received.

An extremely well got up catalog has reached us from Messrs. Phelon a Moore, Ltd., 12, Mortimer Street, W It is printed in two colours, and addition to the illustrations of the we known P. and M. motor cycles, t catalogue contains carefully writte driving instructions, separate illustr tions of many of the working parts, a instructions how to keep them in orde Copies can be obtained on applicati to the company at the above addres

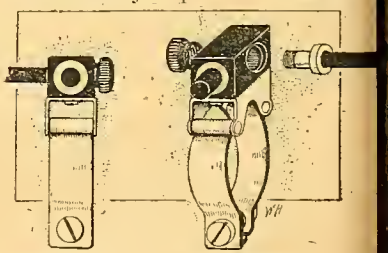
"Rex 1911 Motor Cycles" forms t title of an interesting brochure to ha from the Rex Motor Manufacturi Co., Ltd. The booklet starts off wi a formidable list of successes on 191 pattern machines, chief of which ma be mentioned O. C. Godfrey's ho record, and A. J. Moorhouse's End-t end record, both accomplished single-cylinder models. All the ne models are, of course, detailed in t catalogue, as well as the speci mechanical features.

The catalogue of the L.M.C. mot cycles should be of great interest, ta ing into consideration the number prominent riders who have ordere the new T.T. model. The li describes and illustrates this ne pattern which was so much admire at the show, also the already wel known touring mounts with and wit out the L.M.C. variable pulley. Copi can be had post free from the Lloy Motor Mfg. Co., 132, Monument Roa Birmingham.

The makers of the Ariel have issue a new catalogue giving full particula of their 1911 models. Separate illustr tions of the special points of t machine, accompanied by a lucid d scription of its advantages, are feature of the booklet. The 3½ h.p free engine model fitted with the firm patent decompressor or easy-startin device is so efficient that the make guarantee their machine will start at walking pace within three yards Several pages, some illustrated b photographs reproduced from *The Motor Cycle*, are devoted to en merating briefly some of the successe of Ariel riders in competitions.

A Reversible Handle-bar Switch.

The switch we illustrate below is new pattern just introduced by th Aston Motor Accessories Co., Talfor Street, Aston, Birmingham. Th sketch clearly depicts the method



construction and attachment to th bar, but the chief novelty lies in th reversibility of the terminal conne tion for the wire. This can be in serted from either side, enabling th switch to be fitted on either end the bar. The push is made of ebonit and the whole article is nicely finishe

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Rear Suspension.

WHILST the power of nearly all motor cycles has risen steadily, and the speeds have necessarily increased, it is astonishing that so little has been done to insulate the rider and the vital parts of the motor bicycle against shocks from badly laid or worn roads. We have heard the argument used against rear springing of the road wheel that when a motor cycle is so fitted the vibration of the engine becomes more noticeable. Whether this theory is correct or not, it would be difficult to say without riding the same machine with and without a rear sprung wheel. The fact remains that present day motor cycles are capable of very great speed, but on indifferent roads fast travelling is not luxurious.

Under such circumstances a fairly heavy machine holds the road better than a light one, but if rear springing were more general it is possible that weight could be reduced in many parts which now have to be made strong and heavy to withstand sudden shocks, the worst of which are not felt by the rider who has at least the buffer of good saddle springs and padded saddle top to minimise their severity.

One of the chief objections against springing the whole frame from a manufacturing point of view is the added complication and difficulty in making the road wheels rise and fall vertically without a number of joints which tend to throw the wheels out of alignment and detract from the strength of the frame. That a demand exists for some form of spring frame or rear springing is exemplified by the success achieved by some of the devices which are described elsewhere in this issue We hope to see more attention paid to the springing and comfort of motor cycles.

1911 a Sidecar Year.

FROM all districts we hear of the growing popularity of the sidecar, and being cognisant of the vast increase in the number of attachments being made and sold, these facts would indicate that 1911 is to be a sidecar year. It will cause not a little consternation among some of our readers to learn this, as the sidecar type of passenger carrying motor cycle has been the subject of much criticism in days gone by, especially in regard to its unmechanical design. The sidecar has not worked its way to the front without competition, as at one time it was greatly outnumbered by tricars and forecarriage attachments. Yet it is not difficult to account for its popularity, for the type has certain inherent advantages which must appeal to every motor cyclist. First and foremost, we may treat the sociability of its side by side seats as its main recommendation, besides which there is the ease of storage of the separately detachable units.

Another point which cannot be under-estimated is the fact that a sidecar combination is a double-purpose motor vehicle, for the owner may take a friend to share his pleasures, or in the space of a few minutes remove the passenger attachment and have a fast motor bicycle at his disposal. The two tracks minimise the risk of tyre troubles besides rendering the combination more comfortable to ride than a tricar. Of late the tendency of design of motor bicycles has been to increase their power, ignoring for the moment the vast increase in the number of change-speed gears, and this has resulted in no small measure to the success of the sidecar. Cheap to run, easy to store, and with practically nothing to get out of order, the hold already obtained by the sidecar is not likely to be relaxed.

Rear Springing Devices.

An article dealing with the design of spring forks, illustrated by line drawings, appeared in our issue of Dec. 1st, 1910. Below we supplement it with an article on systems of springing the rear portion of a motor cycle, which, unfortunately, are not so numerous as front springing devices.

IT is a constant source of wonder to the average rider, to judge from opinions which have been expressed by those interested in the motor cycle, that, as regards the rider's comfort, the rear springing of machines of to-day leaves a deal to be desired. During the past six or seven years there has been a slight improvement in comfort, but if its source be traced, exclusive of spring forks, this will be found to be due largely to increased size of tyres and better springing of saddles. It will be seen that in this consideration the effect

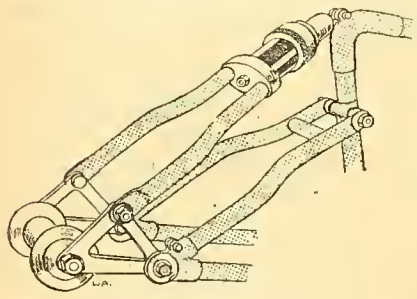

Fig. 1—A.S.L. air spring suspension of rear wheel.

of the engine upon the rider is not allowed to enter, the theme of the discussion concerning itself solely with road shocks.

In the motor car there are three shock absorbers between the road and the passenger. Firstly the tyre, upon which is suspended the whole of the mechanism, and whose function it is merely to round off the sharp edges of road surface shocks. Secondly, the laminated springs, which suspend the major portion of the chassis, engine, and body, and whose function it is to transform shocks into friction; and thirdly the upholstering springs, which enable a person to have some movement relative to the car itself without suffering discomfort.

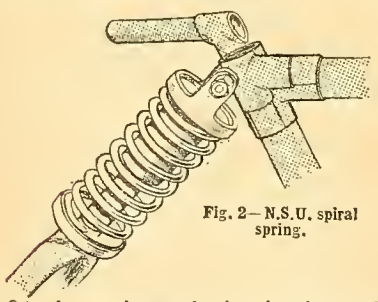

Fig. 2—N.S.U. spiral spring.

Of these three shock absorbers, the second is incomparably the most far-reaching in its results, because it not only ensures the comfort of the passengers, but in enabling the mechanism to be spring-suspended, thereby practically relieves it of road shock, and in addition by carrying the weight of the car elastically, prevents the tyres from unduly bouncing off the road, and in this manner very greatly enhances their effective life.

A motor car can be run with upholstered seats and solid tyres, but never one without spring suspension above the axles, which is common to such vehicles as traction engines and some forms of farm waggons, to say nothing of railway locomotives. In spite of the above facts the motor cycle engineer has had infinite hesitation in adopting even the crudest forms of rear mechanical suspension, and has deliberately cast the onus of administering to his customers' comfort upon the saddle and tyre manufacturers.

A motor cycle is both light and fast, and the shocks to which it is continually submitted simply cannot be adequately absorbed by the mere combination of tyre and saddle which the average rider of to-day has to put up with. To realise just how much shock a tyre has to absorb, let the rider do a mile of ordinary road at twenty miles an hour on a deflated tyre, and then another mile on an inflated tyre but seated on the carrier, by way of seeing what the saddle springs have to do.

Principles of Springing Devices.

In considering rear springing devices in the abstract it is easy to see that (1) they must be true absorbers of shocks, *i.e.*, they must convert them into friction and so dissipate them, (2) they must not interfere with the transmission, (3) they must have the least possible effect upon the permanent wheelbase, and (4) they must be of sufficiently small weight to have no appreciable ill-effects upon the total weight of the machine.

Of these desiderata No. 3 is far and away the most difficult to realise in practice, yet it is, unfortunately, by no means the least important. As the matter may be somewhat obscure, all that need be said is that if the wheelbase be not constant a constant speed of the machine will not mean a constant peripheral speed of the tyre, but as the inertia of the machine is infinitely greater than that of the tyre, it is the latter in its relation to the road which will have to make good the difference.

If, therefore, the wheelbase lengthen upon a shock being taken up, this means that the speed of the back tyre will be suddenly retarded or that of the front suddenly accelerated. In the first case, the drive on the tyre from the engine is constantly trying to accelerate it, so that some slip must take place between tyre and road, whilst in the latter case the inertia of the tyre itself may easily be sufficient in itself to promote this slip. The result is, of course, in any eventuality bad for the tyre.

In order perfectly to overcome this difficulty it is essential that both the front and back springing arrangements must have a purely vertical motion. This is fairly easy to obtain in the front, but the transmission offers a practical difficulty at the back, for if a belt or chain be used the motion of

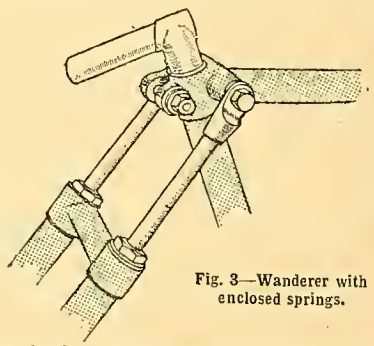

Fig. 3—Wanderer with enclosed springs.

the back wheel must of necessity be along an arc of a circle of which the pulley or one of the sprockets provides the centre. With a shaft drive, however, the difficulty is easily overcome by the use of a sliding joint at either end of the propeller-shaft.

At best, then, back wheel suspension must be a matter for compromise, but as this very compromise is successfully effected in practically all modern cars the problem is not a particularly subtle one.

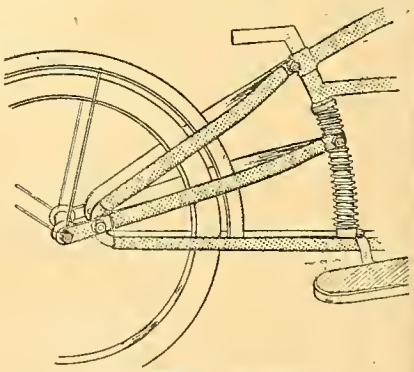

Fig. 4—Elliston and Feil system.

Now for the advantages of rear springing. Putting the rider's comfort first the next thing is the superiority of carrying sprung weight rather than unsprung weight, and this is the matter which most affects the tyre life. Im

Rear Springing Devices.—

portant as it is to keep the tyres rotating at as nearly a constant speed as possible, it is even more important that the driving tyre, upon which the engine is continually endeavouring to exercise its power of acceleration, should be kept constantly in contact with the road surface. If the tyre is allowed to jump from the road even momentarily the engine commences to race it, whilst the friction of the machine itself tends to retard the motor cycle as a whole. In consequence, when the tyre renews its acquaintance with the road the relative speed of tyre and road surface is slightly changed.

The inevitable result is tyre slip, accompanied by unnecessary tyre wear. The fact that the front tyre leaves the road has, in view of the fact that it is not driven, but merely rolls, a practically negligible effect, but it will only do so with a rigid front fork or with a spring fork of bad design.

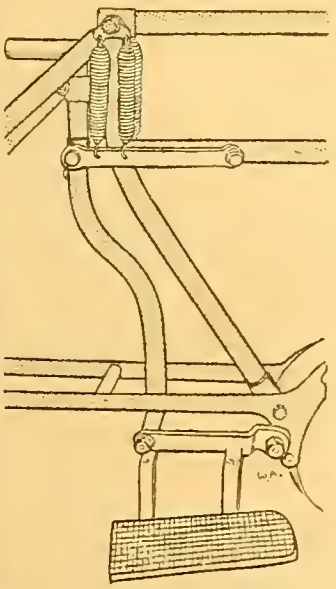

Fig. 5—Bat saddle-pillar and footboard suspended on springs.

The writer recently made some rough observations upon this "jumping" phenomenon on a stretch of road which had been treated with Tarmac. The tread of his front tyre is dead smooth, but that of the back (recently taken from the front wheel) is sharply defined. The road selected has the average number and frequency of pot-holes, and the surface was at the time of the experiment sufficiently "tacky" to preserve tyre impressions very clearly.

At low speeds it was found impossible to trace any signs of "jump," but at fifteen miles an hour they became quite perceptible, and at twenty miles per hour decidedly apparent. In some cases this speed resulted in the back tyre completely leaving the road for an inch or two, but, generally speaking, the result was that the tread print had almost disappeared for a short distance upon emerging from the pot-hole. These holes were roughly about 18in. long and about 1in. to 1½in. deep.

At thirty miles per hour this effect became largely exaggerated, whilst, in addition, another effect became slightly perceptible. At this speed "jumps"

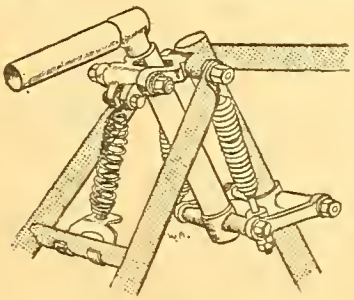

Fig. 6—Ariel spring seat pillar.

of a foot or more occurred, and at the point where the tyre returned to the road there were distinct indications of tyre slip.

In other words, the engine was now getting a chance to race when the load was momentarily eased. At thirty-five miles an hour the evidences of tyre slip were most easily perceptible; after this speed and up to forty-five miles per hour the "jumps" got larger and the "slips" began to diminish.

This is explainable by the fact that at the high speeds the engine was practically going "all out, and therefore could only increase its speed to a relatively small amount. But the worse the "jumps" became the worse was the shock to the tyre on landing, and at some places the marks showed that the tyre had been not very far off completely flattened out.

A 3ft. Jump.

The largest jump at 45 m.p.h. was about 3ft., but it will be understood that the distances given are really only half an indication of what actually took place. To be accurate, the jump should have been measured from the point at which the weight on the tyre, as shown by the marks, was relaxed to the point at which it was reasserted. At the same time the road, it must be remembered, was certainly not truly level between the pot-holes.

When travelling along the inertia of the machine tends to keep it on a perfectly straight course in the vertical

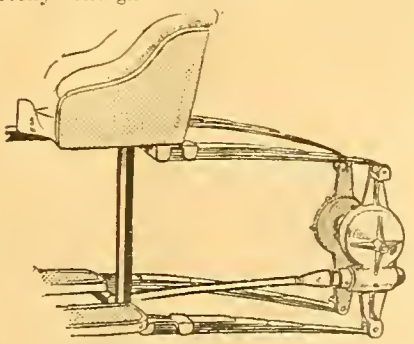

Fig. 7—T.A.C. laminated springs.

plane, and if a system of spring frame be used it is just as if the weight of the machine were carried by overhead rails and the tyre were kept pressed upon the road.

Of course, it is absurd to expect any springing arrangements to keep the tyre on the road over Ballig Bridge on a T.T. machine, because jumps were last year being made at this point which cannot have been much less than 10ft. or 12ft., and a good many machines were momentarily several inches from the ground—if one's eyes are to be trusted. Pot-holes are very much more common than Ballig Bridges, but they are only Ballig Bridges in miniature all the same, and if the little "jumps" can be effectively obviated, an occasional big "jump" will scarcely be grudged.

By way of illustrating the trend of rear-springing design, sketches of a few of the different types are given, together with one or two instances which show the difference between a motor cycle frame where the road wheels are sprung and a rear springing for the rider only. In the latter case it will be understood that there is no advantage from the point of view of tyre wear, as explained in the foregoing paragraphs, but they are excellent attempts to make up, as far as the rider's person is concerned, the deficiency which exists consequent upon relying upon tyres and saddle to absorb shocks.

Fig. 1 is the A.S.L. device. The back hub is supported upon short links, which give it a pronounced radial motion. The

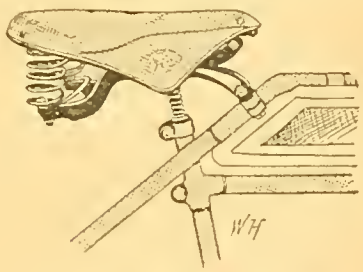

Fig. 8—Rex cantilever spring seat pillar.

normal position of the link being horizontal, however, this radial effect is reduced to a minimum, and probably only results in shortening the wheelbase by at most half an inch. Similarly, the belt is effectively shortened and lengthened alternately, but is probably sufficiently elastic in itself to take up this lost motion without any trouble.

In any case this particular theoretical disadvantage does not appear to count for much in practice. In the N.S.U. and Wanderer devices, figs. 2 and 3, the rear chain stays are hinged at the point where they meet the main down tube, and the back hub consequently moves upon a large radius. The N.S.U. employs a single large coil spring, whilst the Wanderer has two small pistons working inside the rear stay tubes, these pistons acting as air compressors in both directions. The cylinders *(sic)* are sealed at both ends, and well packed with grease, so that there is, in this case, some considerable friction, which damps any tendency the springs have to set up a bouncing action.

The Elliston and Fell spring frame, fig. 4, is of the same type as the above, but is constructed upon different lines. The long lever multiplies the motion considerably, and in consequence the compression springs, between which its

Rear Springing Devices.—

longer end is held, may be made light and soft in working. At the same time, it appears as though it might easily be improved by introducing a certain amount of additional friction into the slide, which would not, one would think, be a difficult matter, and which would doubtless improve a device which certainly has the great merits of neatness and strength.

The rear suspension of the Wilkinson T.A.C., which is somewhat similar to the front fork illustrated in *The Motor Cycle* of December 1st, 1910, page 1201, is designed on quite different lines, and appears to be highly efficient. It is, in fact, conceived on car lines, and employs four quarter elliptic laminated springs, two on each side of the hub, the latter being supported in rods joining the free extremities of these springs. Nothing, admittedly, is perfect that is made by man, but to suggest any improvement upon the T.A.C. rear suspension would, in the writer's opinion, be a difficult matter, as far as its suspension functions are concerned. The question of brake fitting must, however, not be forgotten, and the T.A.C. device only lends itself to use with a band-type brake. We offer no criticism of the latter—indeed, it is quite possibly the best, but the fact that the brake construction is so restricted cannot very well be claimed as an advantage. It will have been realised that no difficulty attends the fitting of brakes upon either tyre rim or belt rim in the three previously mentioned designs.

Turning now to fig. 5, this sketch represents the Bat idea, which is one of, if not the, oldest type of rear springing on the market. It is a very thorough spring seat device with the additional advantage of spring footboards. The construction is fairly obvious. The seat and footboards are mounted on a simple sub-frame slung to the main frame by means of links and suspended by plain tension springs. This device undoubtedly ensures the rider's comfort, and also reduces, by the weight of his person, the unsprung weight on the back tyre.

The same remarks as regards the reduction of unsprung weight on rear tyre apply to the Ariel seat-pillar arrangement shown in fig. 6, and the Rex cantilever arrangement, fig. 7. In the Ariel the weight is carried by tension springs but a third spring is introduced to act as a damper to the others. In the Rex arrangement the saddle-pillar is hinged to the top tube, and its movement is controlled by a compression spring carried on a guide which fits in the ordinary seat-pillar tube. This seat springing is most comfortable, and well worth the slight extra weight carried.

NOTED YORKSHIRE ACCLIVITIES.

NO difficulty will be experienced in finding a suitably severe course for the next quarterly trials to be held in Yorkshire on April 22nd, starting from Harrogate. The district abounds with long, gradual climbs more or less severe. Below we reproduce illustrations of one or two noted acclivities which possess good surfaces, but, as may be said of most Yorkshire climbs, the hills are rather twisty, which should provide a still better test of a motor cycle's hill-climbing capabilities. Particulars of the photographs reproduced, showing severe hills within easy riding distance of Harrogate, one or more of which may be included in the quarterly trials course, are as under:

(1.) Norwood Edge, looking down the hill.

(2.) Pot Bank (2 miles from Harrogate). This hill is steep and has two bends, one at the foot and one about forty yards up. (Looking down the hill.)

(3.) Lindley Wood Reservoir Hill (3 miles from Otley), a particularly severe gradient.

(4.) The first bend of Norwood Edge, a hill over a mile in length. It starts with a sharp bend, followed by a stiff stretch and another bend.

(5.) Second bend of Norwood Edge, looking up the hill.

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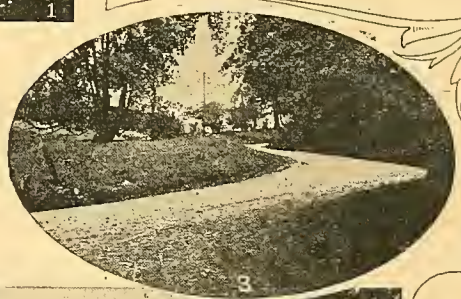
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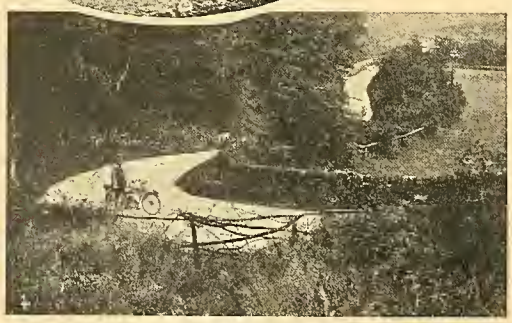
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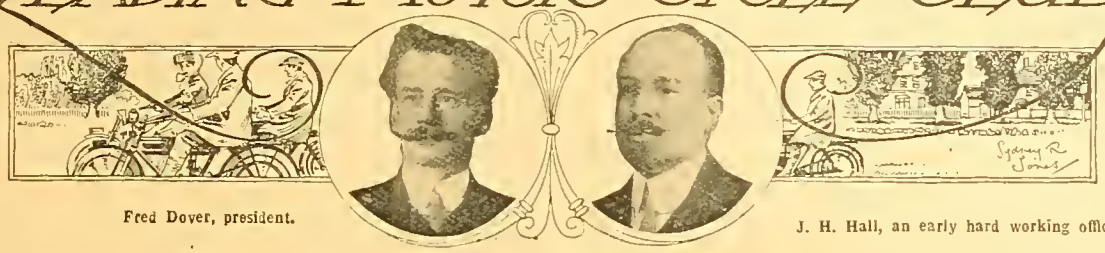
LEADING MOTOR CYCLE CLUBS



Fred Dover, president.

J. H. Hall, an early hard working official.

No. 6.—THE SHEFFIELD AND HALLAMSHIRE MOTOR CYCLE CLUB.

THE foundation of this club in the early part of 1904 was due to the energies of a few pioneers, and at first consisted of five members only. The first president was the late Mr. Arnold Muir Wilson, the famous Yorkshire solicitor, and its first secretary Mr. J. Haslam. After a short term of office, pressure of business compelled Mr. Wilson to resign, and he was succeeded by Mr. J. H. Hall, to whose energy and generous assistance the club soon grew to be one of influence, and in 1908 had 100 members, and was reputed to be the largest motor cycle club in the provinces.

W. Hill, treasurer.

Mr. Hall's removal to London for business reasons made it impossible for him to continue to be president, and his place was filled by Mr. F. Dover, in whom the club has a president second to no other. Himself a keen rider, he brings to his office the knowledge of a successful business man. Well known as a rider in A.C.U. competitions like the End-to-end, he is likely to come still more to the front in view of his projected twenty-eight days' coast ride in May.

A Change in the Secretaryship.

In 1909 Mr. T. F. Turner replaced Mr. Haslam as secretary, and in 1910 was succeeded by Mr. Daniel Bradbury, who still holds the office, and to him several new features in the club are due.

The club has always sought to foster the competitive spirit, and competitions have always occupied a foremost place in the club programme. Each year has had its hill-climbs, speed-judging competitions, and reliability trials. One of the old ex-members (Mr. W. Barber) in 1906 won the club hill-climb on a machine entirely of his own manufacture. The engine was made by himself from his own patterns, and even the wheel hubs were turned by him from the solid metal. In the End-to-end trials and the 1,000 miles the club has two consistent performers—Messrs. F. Dover and J. Haslam, both of whom hold A.C.U. gold and silver medals for these events. The club has also sent a team for the last three years to the M.C.C. team trials at Daventry, but ill-luck has dogged their footsteps—or rather wheel-marks—in this event. In 1908 the passenger combination failed. In 1909 the passenger machine scored full marks, but one of the solo machines went amiss, whilst in 1910 the passenger combination picked up a nail at the seventeeth mile. However, the club will continue to be represented in the competition, and hopes for better luck in the future.

A specially successful and interesting competition is the club bogey hill-climb originated by the present secretary. This takes the form of a monthly hill-climb, in which each competitor may make four timed ascents of the hill during the month, and these ascents may be made at any time upon two days' notice being given to the timekeeper. A competitor makes one ascent of the hill, gets his time entered on his card, spends another day or two "tuning up," makes another ascent, and so on, so that he has always some competition to interest him and to keep him busy improving the running of his machine. The winner each month receives a guinea prize, and every competitor who beats bogey time receives a club silver spoon. This competition has had the effect of transforming peaceful "potterers" into really skilful competition riders, as interest is maintained throughout the year.

Trials more Severe Nowadays.

In the early days the reliability trials most often took the form of non-stop runs of eighty or ninety miles. Then Bridlington and back was tried, but for the last two years the trial has taken the form of a Sheffield to Holyhead and back run (384 miles), with two hours' rest at Holyhead. The club's only important trophy (the Hutton Shield) is awarded for this event.

This year the club has been amongst the few holding winter reliability runs. This was held on December 27th to Bridlington and back (170 miles), and proved a very severe trial, half the journey being through six inches of snow, and intermittent snowstorms.

S. Sawer, captain.

J. Haslam, first secretary.

During the winter the club members are kept together by means of whist drives and lectures, the club having been very fortunate in securing the services of Mr. Jas. L. Norton as lecturer for the last three years.

This year one or two innovations are being discussed. A joint meet with the Derbyshire Pennine Club is thought of, when the Pennine Club may demonstrate some of the wonders of the old Derbyshire lead mines.

Daniel Bradbury, hon. sec.

An eminent lecturer will also discourse to the club on the subject of the old British and Roman remains and forts on Mam Tor, Derbyshire, the lecture to be given on the spot.

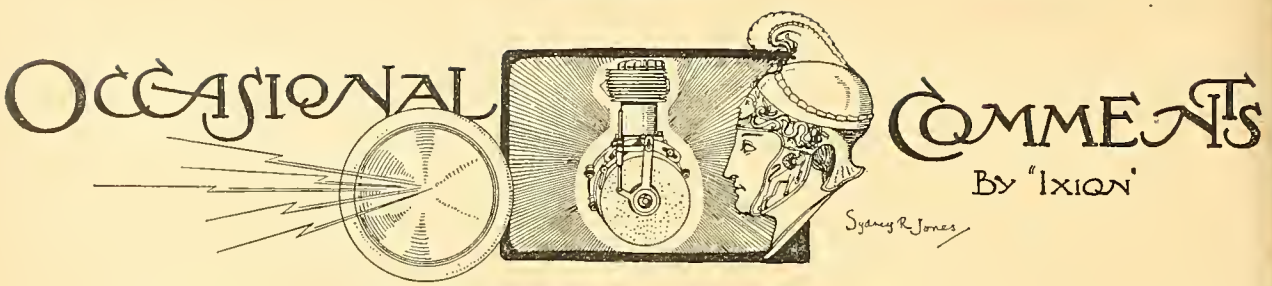
Prospective members of the club will be gladly furnished with particulars of membership on application to the hon. secretary, 3, Fulmer Road, Endcliffe, Sheffield.

MOTOR CYCLING CLUB.

The M.C.C. has decided to make the Mermaid Hotel, Yeovil, the headquarters for the Easter tour. Yeovil is on the route of the London-Land's End and back competition for the Jarrott Cup, and is situated in easy reach of many charming and interesting seaside resorts, the famous Cheddar Gorge, and many other places of interest.

Early application for bedrooms should be made to the captain, Mr. F. J. Jenkins, 35, Loveday Road, Ealing, W.

Mr. Charles Jarrott, president of the M.C.C., has very kindly promised to attend the opening run to Brighton on April 1st, when he will present the gold and silver medals won in the winter run to Exeter and back. This is a new departure for the M.C.C. In previous years all awards have been presented at the annual dinner held early in December, but the committee felt that it was unfair to keep the happy winners of this strenuous competition waiting so long for their medals.



An Invaluable Magneto Tip.

I rescue the following invaluable magneto tip from an obscure corner of a recent issue, where it perhaps escaped many careless eyes. A number of the "insoluble" magneto troubles which are referred to highly salaried experts are ascribable to an item which many owners never consider.

The moving arm on the contact breakers of the Bosch, Simms, and some other high tension magnetos is pivoted in a fibre bush by a short steel stud. To avoid lateral rocking, this stud has to be a fairly tight fit in its fibre socket, and if either the stud becomes rusted, or the fibre swollen by damp, the contact breaker arm may stick.

The trouble is particularly frequent in bad weather, or when a machine has been laid by in a damp atmosphere for some weeks or months, and is rather elusive. Its nature is invisible until the dustcap has been removed, and very frequently the arm is freed by a touch of the fingers when the contact breaker is being examined. Then the cover is replaced, and ere long the mishap is repeated.

It is easily remedied by polishing the steel stud with emery cloth, or by very gingerly enlarging the hole in the fibre with the aid of a rat-tail file. I plead guilty to having been baffled by this mishap for the space of an hour in my salad days, during which hour the rain fell in sheets.

Cheap, Light, Passenger Vehicles.

Though fools rush in where angels fear to tread, I have just enough sense not to dogmatise about the design of light passenger outfits; but I think experience does justify one criticism of many amateur designs which aim at the £60 tricar or sociable.

Many such designs attempt to save about £15 by eliminating the automobile type of gear box, and substituting some cheap and simple variable pulley device. All these variable pulleys suffer from a certain fixed disadvantage in passenger work, *i.e.*, that the emergency gear is rather high in ratio—6½ to 1 is about the lowest procurable in ordinary specifications. Such a limit demands a high percentage of power to weight, say, from 6 h.p. to 8 h.p. to 3 cwts. or thereabouts, if really bad hills are to be climbed with certainty.

Furthermore, the best belts soon give up the ghost under these exacting conditions. Given a dry road and a clear rush, a 5 h.p. tricar or sidecar geared 6½ to 1 should swoop up any main road hill at a good bat, provided the engine is in tune. But when the engine is out of tune, the hill partially blocked by traffic or clogged with mud, the wind contrary, etc., etc., the outfit cannot get up.

Hence the man who does not want the bother of continually keeping his engine in Brooklands tune and yet desires to climb bad hills under all conditions must have a gear box of the car type, affording a really low emergency ratio; or, alternatively, he must have a chain-driven machine. I have not infrequently failed on such hills as Gore and Rectory with a low gear of 8, 9, or 10 to 1 (chain driven) on a 5-7 h.p. sidecar outfit, simply because I have not had time to keep my engine in proper tune. The duffer or the busy man wants a very low emergency gear, and this necessitates a rather costly specification.

Easily Detachable Wheels.

I am delighted to see that several firms are paying genuine attention to the perfection of detachability in their wheels. I have suffered untold annoyance in the past from ignorant design of these details.

What with very stiff forks that had to be sprung apart and would not spring, with designs that affected bearing adjustment, or necessitated the removal of about a hundred small clips, screws, brackets, and twiddly bits, with loose hinged rear forks and chain stays that would not come back into register, the removal of a wheel used to be a hideous nuisance.

Most of us like to have our wheels out now and again. We use heavier tyres for summer touring and winter work than we require for isolated rides; we use a pair of light wheels and sprint tyres in the *standard roadster* class (at our club hill-climb, of course); we perhaps have a prejudice against slip-jointed tubes, and cannot put in a new endless without removing the wheel, and so forth. Let us insist on front wheel stands and drop out wheels on all machines.

Stability.

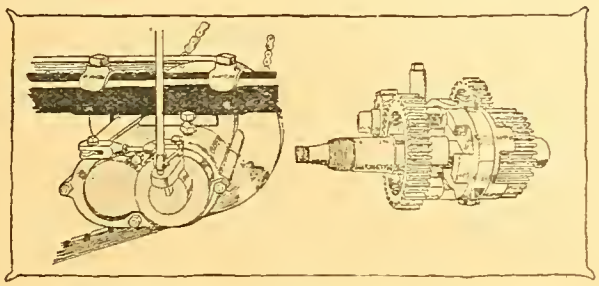
Mr. G. D. Leechman rather exaggerates the effect a lowering of saddle position has upon the stability of a motor bicycle and its rider. He uses the domestic broom as an analogy, and remarks that it is far easier to balance the broom vertically with the bristle end uppermost than *vice versâ*. In this analogy a mass equal to perhaps five-sixths of the total weight is raised from the ground level of the balancing plane to its summit, *i.e.*, the centre of gravity is raised by about six feet.

In the actual case under consideration the variation in stability effected by dropping the rear end of the top tube of the motor bicycle, a mass representing from a half to a third of the total weight is dropped two inches.

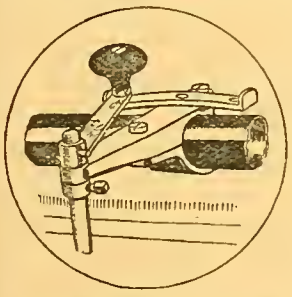
That even this slight adjustment affects stability fractionally is indubitable; but can it affect stability to the degree alleged? Can it appreciably increase the frequency or magnitude of side-slips? Can it have as much influence as the amount of petrol in the tank? I believe the engineer who pretended to adhere to the straight top tube on this sole ground was, to put it vulgarly, talking through his hat.

A Week-end on a Two-speed Douglas.

HOW well we can recall, in the winter of 1905, a Mr. Barter calling at our office with an ordinary pedal bicycle strengthened in various parts, mounted into which was a wonderfully clever twin-cylinder horizontally opposed engine of his own design. That machine was the forerunner of the present-day Douglas. In its earliest form it was christened the Fée, and it was left with the staff of this journal for trial. Weighing altogether about 75 lbs., it attracted a good deal of attention, and earned the plaudits of many engineers who examined it. Our trials, however, were not altogether free from trouble, for the current distributer with which the engine was fitted was not without blemish, neither was the round belt drive with jockey pulley ideal, and the horizontal valves in the cylinder were found to make the engine somewhat erratic in the power given off. Later it was re-designed and named the Fairy, and a number were sold, but what was wanted to make the machine a success—and we openly expressed this opinion at the time—were vertically placed inlet valves, a magneto, and direct V-belt drive.



The complete gear box showing large belt pulley and chain from engine. On right, the gear wheels and dog-clutch mechanism.



The gear changing lever on top tube. The midway stop is the neutral position.

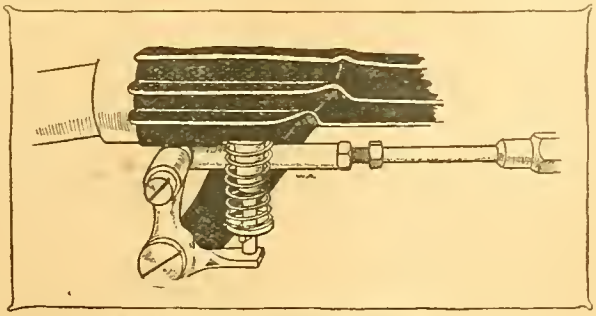
How Mr. Douglas came to meet Mr. Barter we know not, but the next we heard of this wonderful little Fée-cum-Fairy was a letter from Douglas Bros., general engineers and ironfounders, of Bristol, informing us that they had taken up the manufacture of the machine under their own name, and, most important of all, had adopted all the improvements outlined above. We need go no further with this brief history, for we all know the success the Douglas has attained in the comparatively short period of four years, but will pass on to the latest creation of the company—the two-speed and free engine Douglas and its performances on the road.

Douglas Bros. have earned a name for thoroughness, and in every way it is deserved. We had an example of this right from the commencement of our trial. The little machine was delivered to us for test equipped in every detail, with horn, and lamp, and generator charged. Not a tool, valve, belt fastener, or plug was missing from the spares, and even a knife for shortening the belt and a puncture repair outfit were included. This is not a trivial matter by any means. In the course of a year the staff of *The Motor Cycle* are favoured with many types of motor cycles for trial purposes, some of them more or less inadequately equipped. The writer of these notes has a list of forty-two different motor cycles he rode during last year, but cannot recall that any of them were sent out so complete and free from worry to the user as the Douglas was.

Our test of what is probably the lightest two-speed twin on the market consisted of a week-end run of 360 miles, and what the two-speed Douglas cannot do we were unable to find out in this distance. Hills of the calibre of Netherhall Gardens, Westerham, Crockham, River Hill, Titsey, are all taken in their stride on the low gear of 8 to 1, and all ordinary gradients on top (5 to 1).

The carburetter air and throttle pistons removed by unfastening the milled screw holding the yoke.

We may here throw out a hint in changing down on steep gradients, and that is to engage the low gear before allowing the engine to slow down too much. On two occasions after tackling steep climbs with a hot engine we delayed changing until too late and the engine refused to pick up, but so long as the revolutions were kept high no difficulty was experienced. The capabilities of the 2¾ h.p. Douglas would surprise many riders of heavyweights. It is some months since we rode a twin lightweight, and the manner in which the horizontal twin tackled single figure gradients came as a revelation. And so silently and comfortably for the rider too, thanks to the even firing and efficient spring fork.

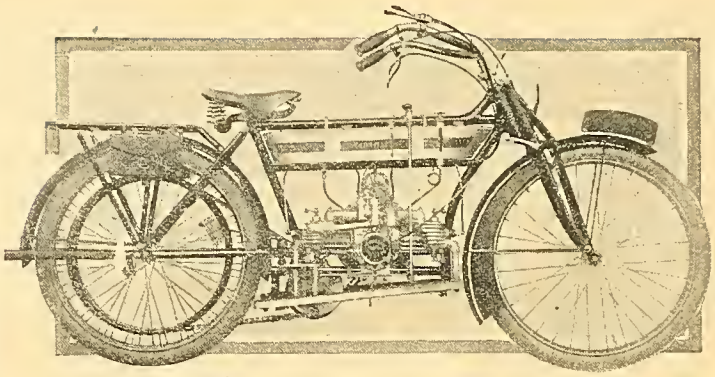


Operating mechanism for the vertically-placed exhaust valves, showing screw adjustment provided

Two Easy Methods of Starting.

Starting may be either by a geared up handle permanently attached to the gear box, or by engaging the low gear and walking alongside. We personally preferred the latter method, but both are quite simple and easy even for riders of

Two-speed Douglas.— advanced years. Heavy roads were the order of the day during the greater part of the test, and this served further to improve our opinion of this little mount, for side-slip is almost unknown. For high average speeds over winter roads the Douglas would take some beating. As a proof that the large driving pulley is kinder to the belt, we made no adjustment at all. Change of gear is easily effected either by easing the clutch or merely raising the exhaust valve lifter. Fifty miles of London traffic prompt us to suggest to the Douglas designers that the clutch pedal would be much more conveniently placed on the right footboard. There is the pedal brake on the left-hand side which at present it is impossible to use in traffic owing to the foot being on the clutch pedal. In such cases one has to rely solely on the front rim brake. Another point—why, oh, why is the carburetter jet a fixture? If Mr. Douglas had seen us dismantling the carburetter three times in a single run, all because we could not probe the inner recesses of the jet, we venture to suggest that he would have taken compassion and altered his patterns forthwith. Yet we are told by riders that it is very very seldom the jet gets stopped up.



The model E Douglas with two-speed gear, free engine clutch, and handle starting.

In all other respects the Douglas has left us with a very great respect for its capabilities. Twenty-two m.p.h. average on a long run understates its powers, and with such great economy withal. For instance, we averaged 110 miles to the gallon, oil consumed was less than one quart, and the back tyre was hardly scratched.

The nicely fitted parts told their tale in the end, for the crank case and gear box were conspicuously clean at the end of our run, whilst the appearance of the machine as a whole was a striking testimony to the mudguarding arrangements and á proof of the efficacy of long, wide footboards.

COVENTRY AND WARWICKSHIRE M.C. 1911 PROGRAMME.

AN EVENT FOR AMATEURS v. PROFESSIONALS.

ON Saturday, May 13th, the committee of the Coventry and Warwickshire M.C. has decided to promote a trade *versus* amateur trial, the results in the amateur section automatically to form an eliminating trial for the M.C.C. Team Trial for *The Motor Cycle* challenge cup. This competition should prove one of the most interesting of the year, for the Coventry club, being in the centre of the industry, has the finest professional riders of the day in its ranks, whilst there is no dearth of really experienced amateurs. Last year the Coventry club won both the M.C.C. and A.C.U. inter-club championships with a perfect score, and amateurs were included in each team. At present it is not proposed to limit the number of entries. The contest will be a reliability run over a severe course.

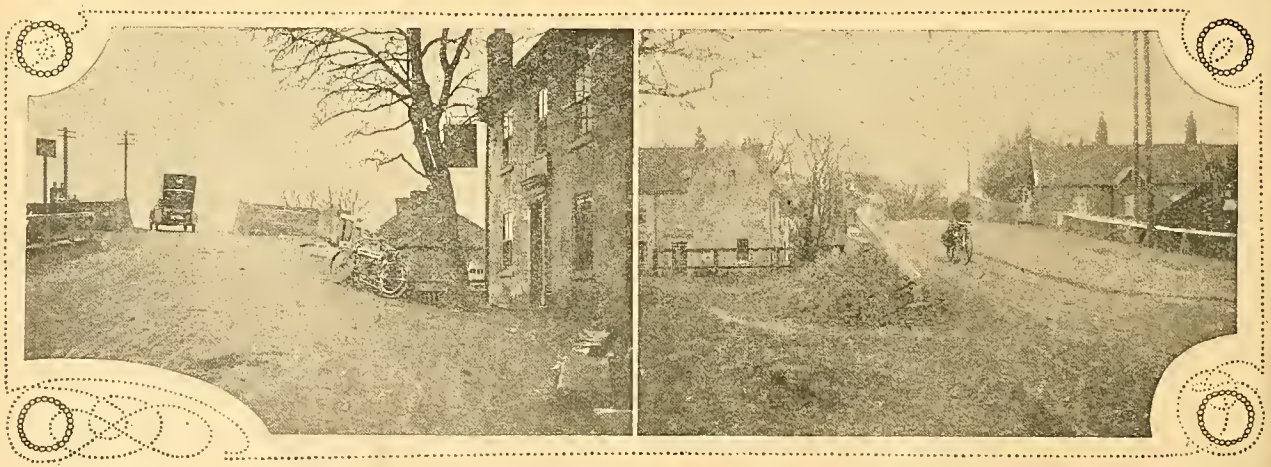
Other important events decided upon are:

Saturday, June 24th.—Annual Welsh run. Destination, Aberystwyth.

Saturday, July 15th.—Twelve hours reliability trial to Bath and back, *viâ* Cotswold Hills, for championship of the club. Award, fifty-guinea challenge cup.

Saturday, September 9th.—Annual open hill-climb.

Besides the above, other competitions of a minor order will be held, and teams will again be entered for the M.C.C. and A.C.U. inter-club championship trials



A DANGER SPOT IN THE EAST RIDING.

Hull Bridge, Beverley, a real danger spot. Happily its removal has recently been decided upon, the East Riding County Council having passed a scheme for a new bridge. It is quite impossible for anyone riding up this bridge to be aware of anything coming up the other side till quite near the top. Note the narrow space left by the car. This bridge is on the main road from Beverley to Hornsea, Bridlington, and Holderness, and there is no other way of crossing the river Hull (except by ferry) for eight miles in either direction.

TESTS OF REFLEX LIGHTS.

THE Expert and Technical Committee of the R.A.C. has issued its report on some tests made of Reflex rear lights. As these red warning reflectors are gaining favour among motor cyclists, we give below extracts from the report:

Experiments were made with two of the Lea-Francis "reflex lights," a large size with a lens of 2¼in. diameter, and a small size with a lens of 1½in. diameter. The experiments were made upon a very dark night, and there was a slight haze.

A 15 h.p. car was used. There were two acetylene head lamps which had no specially concentrated central beam. Observations were made from the driving seat of the car and looking through the glass screen.

A red "reflex" light of the smaller size was held in front of the car, with the lens facing the car, at a distance of fifty yards. At this distance the white collar of the assistant holding the "reflex light" could just be distinguished, while at sixty yards he was quite invisible.

The red gleam of the "reflex light" showed brightly at sixty yards. The "reflex light" was then carried 160 yards away from the car, and held facing the car. At this distance the red light was clearly visible. Similar experiments were carried out with the larger size "reflex light," which was also distinctly visible.

The "light" was raised and lowered and carried to and fro over the road without being lost to view. The experiments show that the "lights" are easily visible at about three times the distance at which a man on the road would be seen.

Further experiments were subsequently carried out with a view to comparing three "reflex lights" of different manufacture. The three lights were those known as the Lea-Francis, Phillips's Enday, and Lucas's.

It was found that, when the "reflex lights" were placed side by side 18in. from the ground, and a car having two parabolic electric head lamps was driven towards them, the following were the distances at which the "lights" were first distinguished: Lea-Francis, 130 yards; Lucas's, 90 yards; Phillips's Enday, 50 yards.

In addition to the "lights," a piece of white paper, 3in. square, was held up. This was distinguished at 60 yards.

The committee is of opinion that the "reflex lights" are well adapted for use, in lieu of tail lamps, on bicycles and other vehicles, and that they render such vehicles visible at a much greater distance than that at which an unlighted vehicle could be seen without their aid.

The committee recommends that the "reflex lights" be fixed to the back of vehicles, at heights between 2ft. and 6ft. above the roadway; further, that they be firmly fixed so as to point horizontally, without swivel or other means of adjustment.

For distinguishing road signs, the committee is of opinion that the "lights" are eminently suitable for the purpose, but that the colour red should be restricted to use as tail lamps for bicycles, farm carts, etc., in order to avoid confusion.

A FROSTY DAY. A snap in Cheshire. Dunham Hill, Altrincham, on the Chester Road.

HERTS. COUNTY A.C. (Motor Cycle Section) ANNUAL DINNER.

THE annual dinner of the enterprising motor cycle section of the above club was held at the Pea Hen Hotel, St. Albans, on Thursday last. Mr. Charles Wheeler, M.Inst.A.E., presided. After the loyal toasts had been proposed by the Chairman, Mr. W. Cooper proposed "The Ladies," and he said he hoped to see an ever-increasing number of them at the club's events.

To this toast Mrs. C. C. Cooke, wife of the honorary secretary, replied in suitable terms.

Captain Seymour, in proposing the toast of "The Visitors," said last year the club had about fourteen members, and now he was happy to say its membership exceeded that number by about a hundred.

"The Press" was proposed by Mr. W. Pratt, who laid great emphasis on the importance of motor cyclists having a clubhouse in London.

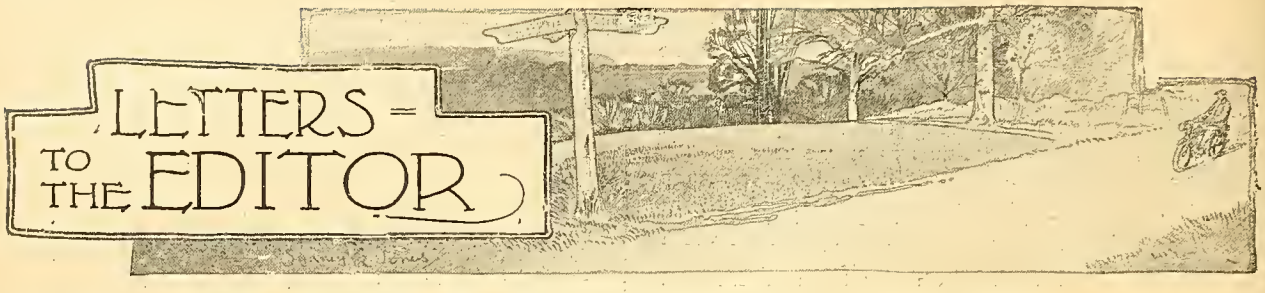
Mr. E. M. P. Boileau and Mr. W. G. McMinnies responded, the latter mentioning that Mr. Pratt had premised ten guineas to guarantors.

The Chairman, having briefly referred to the club's competitions, mentioning especially the Amateur v. Trade contest, "The Club" was proposed by Mr. F. Straight (secretary the A.C.U.), who referred in glowing terms to the success of the club's various competitions, and spoke in a very appreciative manner of the admirable work done by the club's energetic hon. secretary.

Mr. C. C. Cooke, in reply, said that the motor cycle section of the Herts Club was the largest body affiliated to the A.C.U., and the Herts County Club was the largest local club in the kingdom. Touching new events, he mentioned the competition for ladies for which *The Motor Cycle* had presented a cup, and expected that the speed trial and Amateur *v.* Trade competitions would be well supported.

Dr. Upcott Gill proposed "The Chairman," to which Mr. Charles Wheeler suitably replied.

The prizes were then presented by Mrs. W. H. Leese, and her first duty was to present Mr. C. C. Cooke with a portrait of himself. At a later stage in the evening Mr. Wheeler mentioned the splendid work that Mr. G. F. Carter had done for the club, in recognition of which a cup was presented to him. Mrs. Leese was then presented with the club's gold medal, and the evening concluded.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Winter Reliability Trials.

[5390.]—The Surrey *v.* Streatham trials was certainly instructive. Imagine the rider of a "touring" machine having to dismount on a little hill like the one leading out of Redhill!

I am sorry to see the trade deserting the Quarterly Trials. Would not the recent trial have been made still more interesting by providing a compulsory stop on Titsey or Westerham for all machines with free engines?

As I am one of those riders who strongly object to trouble and would like a two-wheeled perpetual motion perambulator, perhaps you will permit me to sign myself POTTERER.

The Use of a Differential Gear.

[5391.]—Letters 5342 and 5348 prove what every engineer who has studied the light motor vehicle knows, viz., "that where more than one driving wheel is used a differential gear is necessary."

Many makeshifts have been devised to take the place of the differential gear, but with ill success. Probably the worst device is the slipping belt dodge repeatedly shown on illustrations of runabouts. What is the objection to the differential gear?

The only objection seems "cost." This objection has been removed, and a differential gear can be designed and manufactured for a single chain, or a belt drive giving a solid or through live axle, the cost of which does not exceed that of a double slipping belt drive with stub axles.

W. E. BURGESS.

Special Colonial Requirements.

[5392.]—As a regular reader of your valuable paper, will you allow me to confirm letter No. 5164, December 8th, 1910, where the writer advises motor cycle manufacturers to use stronger-beaded edge rims. I strongly advise this. I possess a 1910 Humber, and the roads up here are atrocious. Another small item is—if the mudguards could be allowed about an inch and a half more space from the wheel it would allow us to travel in the rainy weather. I made an attempt to ride to Bulawayo about three weeks ago, and got half way, when down came the rain. I was obliged to leave my motor cycle where it was, as it was impossible to move it on account of the mud clogging between the wheels and the mudguards, and I had to walk eighteen miles.

I should like to state that these are the details which should be seen to, to improve motor cycles, not the increasing of cylinder capacity or changing handle-bars to improve looks. My Humber is a 3½ h.p. two-speed, and is capable of carrying me up any of the hills, which is saying a lot.

Bulawayo. CHARLES E. LOWE.

[Several makers already supply machines for colonial use with stronger rims.—ED.]

Tyres and Sideslip.

[5393.]—The danger of side-slip on greasy tramlines and stone setts is ever with us—I should, therefore, be glad to put on record a recent experience.

On Saturday, February 4th, I had occasion to ride my motor cycle from the neighbourhood of the Alexandra Palace to Amersham. I left London at about 7 p.m. in a drizzling rain and had some six or seven miles of tramlines, covered with the very worst type of "grease" (half thawed mud thickly churned up) to go through before reaching the open road, and in addition a low fog, penetrating rain, and bitter cold. The Kempshall tyre on the back wheel held the road in a marvellous fashion both on the appallingly greasy tramlines and later down the almost unrideable slopes from Bushey Heath to Watford, *where even pedal cyclists were wheeling their machines for fear of side-slip.*

I traversed the twenty-seven miles in 1h. 27m., and at no time was I in the least anxious about keeping the machine up. CHAS. S. LAKE, A.M.I.M.E.

Motor Cycle Taxation.

[5394.]—At the committee meeting of the A.A. and M.U. on February 7th the resolutions of the Conference were under consideration. A resolution was unanimously passed that Clause 4 should apply to motor cycles as well as cars. A member of the Conference who was present stated that his impression was that this was the intention of the Conference. I think you may rest assured that before the resolutions are submitted to the Chancellor, Clause 4 will be so amended as to make it quite clear that it applies to all motor vehicles.

(REV.) F. W. HASSARD-SHORT, M.A.

[5395.]—I am sure your correspondent Mr. T. A. Vale, whose letter appears in your issue of the 9th inst., and other readers of your paper, will be glad to know that the question he raises has engaged the earnest attention of the committee of the Automobile Association and the Motor Union, and that the association has suggested that the resolution of the conference in regard to abatements on second-hand cars shall be altered in such a manner as to provide for a reduction of 50% of the tax in respect of both cars and motor cycles which are four years old and over.

I think there is little doubt that it was the intention of the conference that this provision should apply to motor cycles as well as to cars, and that the conference will consider it desirable to make this clear.

STENSON COOKE, secretary A.A. and M.U.

[5396.]—Attention has recently been called to the injustice of the owner of a 1¼ h.p. motor cycle or of a cheap second-hand machine paying £1 per annum, whereas the owner of a trap carrying four persons only pays 15s. I would remind your readers that this is putting the case too mildly. The motor cyclist has his 5s. driving licence to pay, not to mention his initial registration fee of 5s. There is also the petrol tax to be considered. Surely there is nothing in the annals of British taxation more iniquitous. As I pay both for a trap and a motor cycle, I cannot well be accused of being biassed. E 123.

[In the article of February 2nd, page 113, we referred to the annual tax of £1 only, although it is quite true that for the first year motor cyclists pay 30s., when the registration fee and driving licence are included.—ED.]

[5397.]—I have read with interest the articles and letters on this subject. They show that the motor cyclist is alive to the fact that he is overcharged for the use of the roads.

Regarding concessions for the clergy, I think the motor cyclist of something less than moderate means who has to make an old crock do for several years is more in need of concessions than either clergymen or doctors. The comparison of a 1¼ h.p. motor cycle and a horse and trap in your taxation article of February 2nd is wrong, as the motorist in the first year pays twice as much in licences as the trap owner, and is then hit below the belt by the petrol tax—the biggest injustice of all. I have

written to the M.P. for this district (Bristol) and pointed out the injustice of taxing any motor cycle under 3 cwts. at a higher rate than a horse and trap, and allowing that luxury of luxuries the saddle horse to escape scot free. In a courteous reply he promised to bring the matter before the Chancellor's notice.

If motor cyclists will take the matter up on similar lines we may yet obtain concessions for all by a reduction of these greedy taxes, which are levied for the sole reason of getting at and fleecing the motorist because he is a newcomer on the roads. A.A.

Sidecar Licences. A Reader Recovers 15s. Paid.

[5398.]—I wrote you last November on the above subject, and must thank you for the trouble you took in the matter. I had then already paid the extra 15s. demanded, but thanks to the letter from the Treasury which you published, and also to the paragraph *re* the prosecution of a motor cyclist at Haverfordwest, I was successful in getting the amount refunded to me without trouble. I had quite intended writing to you before this, and must apologise for not having done so. Again thanking you sincerely, AB 1152.

Easy Starting Devices.

[5399.] —*Re* letter 5340, I have a similar device fitted to my 1909 Triumph—can be home-made in an hour—and is extremely efficient. My machine fires regularly at four miles per hour.

I wish to fit an extra silencer to my motor, using the present box as an expansion chamber, and putting the new silencer under the bottom bracket; final exit by two tubes each side of rear wheel. I should like to know if any of your readers have experimented in this direction. I find that my easy starting "half compression" arrangement is splendid when used in conjunction with a Mabon clutch, as the machine can be started with a single push of the pedal.

I should like to add a note of appreciation for the many tips I have picked up in your paper. Also, if any reader is in doubt about a clutch, have a Mabon—it is simply perfect. I will add the usual disclaimer.

MARSHALL THOMAS.

The Problem of the Runabout.

[5400.]—I always read *The Motor Cycle* with interest, but I was specially interested in your leaderette on quadricycles, as I am one of those who are trying to discover the missing link between the motor bicycle and the motor car. I quite agree with you that for four wheels belt driving must be unsuitable. It is a mistake to imagine that the slipping of the belts will supply the place of a differential. Also no makeshift contrivance for changing gear can be tolerated.

In regard to air cooling, there is no doubt that if the machine is to weigh something like half a ton air cooling will not be entirely satisfactory; but if a quadcar be designed which weighs but little more than a bicycle and sidecar, experience seems to show that satisfactory results may be obtained.

It will no doubt be difficult to construct a satisfactory machine for less than £90, and you suggest that at this price purchasers will favour a second-hand small car, such as a 6 h.p. Rover. Possibly, but the "quad" would have very great advantages over the second-hand car.

In the first place, it is simpler and very much lighter; in fact, lightness is really the crux of the problem. I believe it is possible to construct a "quad" carrying two weighing little over 3 cwts. If this is so, the expense of upkeep of the quad would be vastly less than that of the second-hand car. Again, the small second-hand is as a rule, to say the least, not fast. There is no reason why a light "quad" should not be almost as fast as my runabout tricar, the speed of which on the hills you were good enough to commend in your account of the recent Quarterly Trials.

Again, a second-hand car has lost part of its life and usefulness. Taking the life of a car at six years, a new car at £90 is as economical in the long run as a two-year old car at £60.

Over a motor bicycle the quad has great advantages in safety and comfort. It has also advantages over a tricar if a passenger is carried, because in a tandem the length of wheelbase is excessive, and in most three-wheeled sociables there is a tendency to tip. I believe, therefore, that there is a future for the quad, but it must be safe, speedy, thoroughly serviceable, able to pass satisfactorily the severest tests, comfortable, cheap, costing less than £100, above all light, weighing under 4 cwts.

I am not without hope that such a machine may be produced before very long, possibly at Malvern.

H. F. S. MORGAN.

A Lady's Appreciation of her Motor Cycle.

[5401.]—I enclose a photograph which probably may interest those of your lady readers who are would-be riders, but are doubtful of their powers, and of the risks of motor cycling. I have read your paper for months past, and naturally have been tempted to take to the sport. The photograph shows me on my son's 1911 Scott, which I find very easy to understand, and it runs beautifully. The Scott is an ideal machine for a lady, as it is so easily started from the saddle with one smart push down with the foot, and glides away slowly when the gear is engaged to the great admiration of those who have watched the rider. The first time I went out, I rode over ten miles with my son in the sidecar to instruct me how to work the levers, of which at first there seemed to be a great superfluity, but I soon found there were only three all easy to understand. Another good feature which will appeal to ladies is the cleanliness of the Scott, and there is no need to worry about lubrication owing to the drip feed. I hope before long many ladies will be enjoying the pleasures afforded by the motor cycle.

The writer, Mrs. L. K. Coleman-Mackie and her 1911 Scott with sidecar.

(MRS.) L. K. COLEMAN MACKIE.

A Silent Motor Cycle.

[5402.]—An absolutely silent motor bicycle and sidecar passed me on Sunday, the 12th inst., about 3.15 p.m., on the North Road just about Finchley Cemetery, going towards London. It would be very interesting indeed to know the make or type of silencer, and if home-made, the particulars. The machine had a sidecar built up very close to the bicycle, and the passenger was resting his arm on what looked like a slipper-shaped spare tank at the back of the bicycle. The machine was painted grey and had a long outlet pipe projecting from what appeared to be a large square silencer. The machine passed me so rapidly and silently that it was impossible to catch the full details. Any particulars the rider of the machine in question can give will, I am sure, be very interesting to your readers in general as well as myself. AX 37.

Twin-cylinder Sociables.

[5403.]—I read "Ilikum's" letter [5359], and can assure him that for ordinary touring purposes the A.C. 5-6 h.p. engine gives ample power.

I have had a three-seater of this make since last April, and I have yet to find a hill it cannot climb with full load. My gears are 5 to 1 and 13½ to 1, which I find more useful than the standard gears. Even with the 5 to 1 gear it comfortably reaches 25 m.p.h. by Stewart speedometer.

T. FREDK. HUNT.

[5404.]—It is, perhaps, not surprising that a non-user should consider an engine of 90 mm. × 102 mm. somewhat inadequate for a two-seated vehicle with a substantial coach-built body, but then he does not know the "A.C." engine, and perhaps does not make due allowance for the extreme efficiency of the transmission, which is by a single chain direct from engine-shaft to rear wheel.

Your correspondent doubts if the "A.C." will do forty miles on the level, but he need not remain in doubt, because if he will give us the opportunity we shall be pleased at any time, when the roads are in fair condition, to give him a run with standard gear of 4½-1 that will set his doubts at rest, and, if he likes, in the same programme we will include the much-discussed Chalk Pit Hill, which will no doubt satisfy him that the machine is not over-geared for all-round work.

One word more about hill-climbing. Owing to the speed restriction of twenty miles per hour in the Quarterlies and the prospect of Chalk Pit Hill at the end of the day's work, the "A.C." team was geared 5-1 instead of 4½-1, and was therefore somewhat handicapped in the matter of speed on hills. As a matter of fact, the eight vehicles entered had all climbed Chalk Pit Hill on two previous occasions—once when the road was frozen hard, and later, after a thaw, with a 5-1 gear when the road was about as soft as it could possibly be.

AUTO-CARRIERS, LTD.

[5405.]—Referring to letter 5369, I should like to express complete agreement with "Ilikum" in the demand for a more powerful or twin-cylinder A.C. tricar.

This machine seems to have struck the happy medium between the ponderous car-like three-wheelers of a few years past and the under-engined, comfortless vehicle which preceded them. Let us now ask the makers to fit either a larger engine with heavier flywheels, or a twin-cylinder one. This with a few minor improvements such as front wheel brakes (which are not yet, I believe standard) would complete an excellent turn-out. Personally, I prefer the tandem-seated pattern, for the driver and passenger are still sufficiently near for reasonable conversation, but it would be very interesting to have user's experiences as to the two varieties of design, especially in regard to back wheel skids and steering control at high speed.

After all, the makers have the market almost to themselves, and should well be able to produce a tricar which should equal the small car on the level when the surface is fair (and it is upon irregular road surface that the three-wheeler fails), and with its reserve engine power, beat it up the hill. The price, of course, should not be raised too near car level.

PROSPECTIVE.

Is the Vertical Cylinder Best?

[5406.]—With reference to "Engineer's" letter in the issue of February 9th, I am afraid that I cannot agree that an inclined cylinder obtains such efficient lubrication as a vertical one. I owned two inclined cylinder machines a few years ago, and found that the lower part of the cylinder always obtained more lubrication than the upper part, and unless some radical alteration takes place in lubricating methods the same drawbacks will recur. Doubtless, an inclined cylinder could be made in such a way that lubrication would be as effective as in a vertical one.

"Engineer" does not like the present day chain stays, which lie in a plane above the axis of the crankshaft. Neither does anyone else who has studied the subject. But the manufacturers turn out machines, and the public purchase. Why alter?

I am afraid the head of an inclined cylinder would lie too near the front mudguard to benefit as much from the so-called cooling draught as the head of the vertical cylinder of standard type, unless the whole engine's position was raised sufficiently to bring the cylinder head level with the top of the front wheel, in which case we should be harking back to a practice discarded years ago, except for ultra lightweights.

There is no difficulty in designing a machine combining a sufficient ground clearance and also enough room between the top of the cylinder and the tank for all requirements, as witness the Triumph and Bradbury and others.

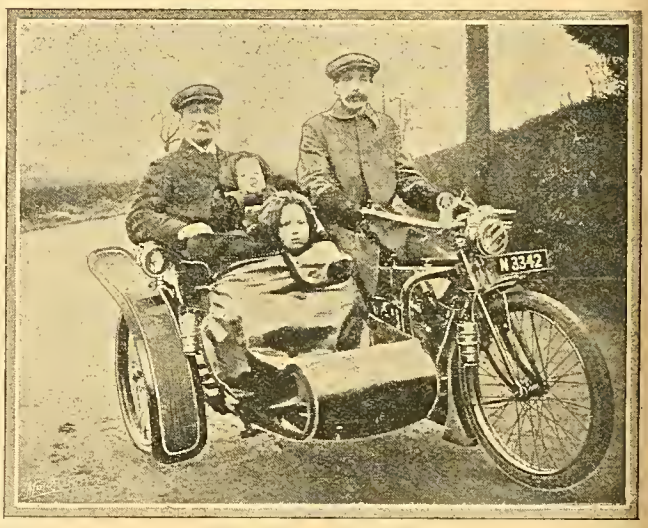
I have never understood the objection to a long inlet pipe for touring purposes as distinct from T.T. machines. With a long inlet my experience has been that valve heads are much less likely to drop off owing to the more regular and gaseous nature of the mixture as against streams of solid petrol and draughts of air compressed in the twenty-fifth part of a second, which is the probable result of using a very short inlet pipe at speed.

C. A. FORBES.

[5407.]—"Engineer" appears to have covered practically all the points which my firm claim with regard to their inclined engine, and I am also glad to notice that he draws particular attention to the cooling question, which no doubt is a great advantage for a two-speed geared machine, and especially for driving in London traffic.

There is, however, one point which he omitted to mention, and that is, the equal distribution of weight. This I consider a very big point. With some machines when going at speed, the front wheel jumps off the ground, but with the engine in the inclined position an equal weight is placed on the front, and moreover, I think the tendency of side-slip from the front wheel is lessened.

W. PRATT,
London manager PHELON AND MOORE, LTD.



THREE GENERATIONS.
A family party snapped in Cheshire on their 5 h.p. twin Chater-Lea Peugeot and sidecar.

Tapless Oil Pumps.

[5408.]—The illustration on page 176 of Mr. Middleton's patent oil pump, is similar to that of Rex patent No. 29,528, December 17th, 1909, which has now lapsed.

THE REX MOTOR MFG. CO., LTD.,
W. WILLIAMSON.

Staggered Cylinders.

[5409.]—I notice that Mr. Frank Reed in his letter [5371] alleges that four-cylinder air-cooled engines suffer from overheating owing to the cylinders being placed in line.

This is a fallacy one often hears mentioned. As you are aware, our factory has turned out many thousands of four-cylinder motor cycles, and the greater part of these have passed through my hands, and in no case has a complaint ever reached me of the rear cylinder overheating. I have ridden a four-cylinder machine daily for the last five years, and my experience, like that of every other user, is that the warmer the engine gets the more power is developed. In this respect the four-cylinder engine is quite contrary to the modern high-compression single-cylinder engine.

Your correspondent's statement that numerous riders of four-cylinder machines have complained of the fault in question appears to me like pure invention.

It is quite clear to me that Mr. Reed has never grasped the simple working of a four-cylinder engine or he would not have brought forward his absurd suggestion of staggered cylinders. Such an engine could not be fired properly by means of a magneto; it would not be properly lubricated, and would lose its even torque—one of the chief advantages of the four-cylinder engine. The crankshaft of such an engine would be most expensive to manufacture, and make the machine also commercially impossible.

W. GRELINGER,
Proprietor of the F.N. Motor Agency.

A.C.U. Quarterly Trials.

[5410.]—I am pleased to see that you consider the time is "not yet ripe" when manufacturers should withdraw from the trials. The January trials prove this up to the hilt, for in that test, machines driven by riders whom last year I saw tearing up Sutton Bank at great speed, actually failed to surmount Warlingham, to say nothing of the test hills.

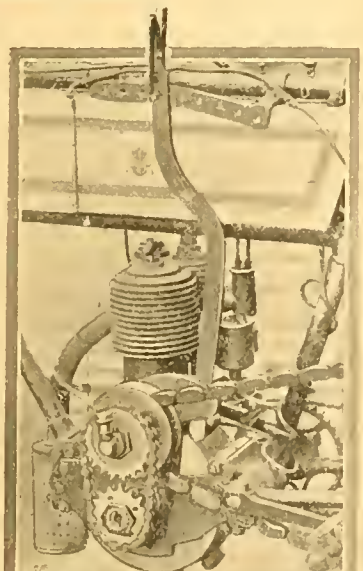
If experts fail, what of the ordinary touring rider, the man who buys a machine for riding from place to place and does not care for the job of pushing up hills—will the results of trials such as this inspire him with confidence in his mount? Let us hope that the manufacturers will see the shortsightedness of their policy and be out for a good advertisement in the April trial, for machines that survive the Yorkshire test will of a surety be in demand.

YORKSHIRE MAN.

Variable Pulleys.

[5411.]—I am sending you a photograph of a variably-geared pulley (similar to Mr. Mabon's) in a rough state. I am sending it to show you that I had this idea months ago, but, being only in a small way, I could not get on with it so fast as I should have liked. I have free engine, but it is not shown in the photograph.

M. PARKINSON.



An early variable pulley. (See letter No. 5411.)

Maintenance of Power on Lightweights.

[5412.]—We read in a recent issue, under "Occasional Comments," by "Ixion," that he states that genuine lightweights suffer from loss of power after use. It is quite evident that "Ixion" has not had lengthy use of a Motosacoche, which does not lose its power, as stated. No one would be more gratified than ourselves if the suggestion he puts forward is carried into effect, viz., to seal valves, cylinders, and carburetter on lightweights before sending them through a lengthy trial.

It may interest you to know that during the A.C.U. 1,000 miles and Scottish six days' trials, when other machines (light and heavy) had their cylinders off to clean away carbon and valves ground in daily, the Motosacoche was never once touched in this respect. This should go to prove that "Ixion's" statement is not altogether correct—anyhow not where the Motosacoche is concerned. Nothing would please us more than a regulation prohibiting carbon cleaning and valve grinding. It may also interest you to know that we have never replaced nor do we know of a solitary broken exhaust valve on a Motosacoche.

MOTOSACOCHE, LTD.

[5413.]—"Ixion's" remarks on the maintenance of tune in lightweights is, I venture to think, quite *apropos*. My own experience, after riding a 5-6 h.p., a 3½ h.p., and a well-known lightweight, coincides with the experience of which "Ixion" speaks, and I am looking forward to the delivery of my new 3½ h.p. with variable gear eagerly. The lightweight is a splendid little machine, but everything naturally being on the small side—piston rings, valves, valve springs, etc.—causes a much more frequent "running down" than on its bigger brother, and anyone who has continually ridden alongside (or attempted so to do) a good 3½ h.p. month in and out, as I have done, must have experienced it. Of course, at a regular 20 m.p.h. bat out and home there is not much effort required on the engine and working parts, but let the lightweight hang on to the best of his (engine's) ability for a run of eight or ten hours on a give and take road where traps are unknown and the blessed open country abounds, and do this twice a week for a month, besides the odd short journeys in between, and my experience has been that you want a lot of carbon deposit removing, valves touching up, inlet valve springs renewing, etc., by the end of the month, if you don't want always to be coming in when the toast has got cold, whilst the 3½ h.p. keeps on its way rejoicing, seeming to like it better the farther it goes, and an overhaul twice during the season is all that is required.

HANGER-ON.

Swaying Sensation when Riding.

[5414.]—Referring to "Ixion's" remarks on the swaying sensations he has experienced on several occasions, he instances three reasons as probable causes, but fails to make any remark as to what I consider to be the commonest and most simple cause, *i.e.*, lack of oil in the steering head, that is assuming the ball races are not adjusted too tightly.

I have encountered this trouble on two occasions, and on two different machines, and have found the cure in both cases to be a little oil.

D. G. WILLIAMS.

A Disclaimer.

[5415.]—On looking through my copy of *The Motor Cycle* I find my name figuring very prominently in an advertisement of Messrs. Douglas and Oliver. I do not know this firm or anyone connected with it, and I have *never* been asked by them if they might use my name. In fact, I have never had any communication on the matter until after the issue of your paper.

I shall be glad if you will kindly drop my name out. The firm may be all right, but I have never before lent my name to anything of the kind, and I will not begin now. I have written Messrs. Douglas and Oliver in the same strain as above. Thanking you in anticipation,

C. C. COOKE.

[We have also received letters in reference to the capital of Douglas and Oliver, Ltd., and our correspondents' state that, although this was given as £30,000 in the advertisement that appeared in *The Motor Cycle*, the actual paid up capital, as filed at Somerset House, is approximately £1,070, which is largely absorbed in preliminary expenses. One writer asks, under the circumstances, what guarantee life members have of enjoying the advantages promised "for life." This statement that the capital given is "nominal" and not "actual," together with the foregoing letter, compels us to ask Douglas and Oliver, Ltd., thoroughly to explain their position.—ED.]

SUMMARY OF CORRESPONDENCE.

Two suggestions regarding the Sutton Coldfield A.C. reliability run were received too late for insertion last week. As the event takes place next Saturday, we publish only a short summary of each letter.—ED.

"Mudplugger" suggests that as the road conditions may be very bad, special marks should be awarded for serviceable and neatly-designed mudguarding devices.

"Royal Borough" thinks that, under winter conditions and bad roads, it is asking rather a lot from both competitors and machines alike to make a good and non-stop performance in a trial over the course decided on.

Two or three readers have written pointing out a slip in the inscription to the old French bone-shaker, illustrated on page 173 last week. The date of its manufacture was, of course, about forty-four years ago, not sixty-four years, as stated.

OUR CURRENT CHAT

Time to light Lamps
(Greenwich)

Feb.	23rd	6.26 p.m.
,,	25th	6.30 ,,
,,	27th	6.33 ,,
Mar.	1st	6.38 ,,

Special Features

REAR SPRINGING DEVICES.
1911—A SIDECAR YEAR.
FORTHCOMING COMPETITIONS.
DISCUSSIONS ON IMPORTANT TOPICS.

The Latest—A Nitro-glycerine Engine.

We hear that the latest development of the explosion motor is the introduction of nitro-glycerine as the explosive agent. We also understand that a motor bicycle has already been constructed with an engine which employs this chemical as the propelling force, and we know that not only the constructor but several friends of his have actually ridden the machine.

The Club Championship Trials.

The committee of the Coventry and Warwickshire M.C. has written, per its secretary, to the A.C.U. and M.C.C. recommending that the present timing methods in the inter-club team trials should be abolished, urging that if the predominating factor governing the award be the riding to fifths of seconds the competitions cease to become tests of motor cycles and the skill of their riders, but a test of the accuracy of watches and clocks pure and simple. Many will agree with this view.

Unusual Test at Cudham.

A party of motor cyclists, including members of the A.C.U. and various southern clubs, carried out a run round some of the steep hills in Kent at the week-end. The famous Cudham Church hill, with hot engines, proved a good test, and the undoing of more than one as also did Hog Trough.

Attack on Hog Trough.

Delightful spring like conditions improved the conditions at Hog Trough. The surface was also in better trim, and with an entire absence of any traffic some very smart climbs were registered, Triumphs, R.W.'s, and Bradburys being to the fore. The latest hill "find," branching off the Westerham Road, provided yet another opportunity of the hill-climbing abilities of rider and machine. The two-speeders were at a distinct advantage, as an awkward bend precludes the hill being taken at any speed. The only single-geared machine to climb this hill was a Triumph geared 6 to 1, owned by a Mr. Grey.

District Trials—A Suggestion.

A suggestion reaches us from a reader who desires to remain anonymous that the A.C.U. should recognise the Northern League in connection with the quarterly trials, that it should also assist in the formation of similar organisations throughout the country and make the district quarterlies into a team competition, the district associations to assist in providing the prizes. The occasion of the Yorkshire trial is suggested as a suitable time to inaugurate the scheme. We think the A.C.U.'s reply to this would be that the rules and arrangements for this year's quarterly trials cannot very well be changed.

FUTURE EVENTS.

Feb.	25	Sutton Coldfield A.C. Open Reliability Trial.
Mar.	18	B M.C.R.C. first 1911 meeting at Brooklands.
,,	23	A.C.U. Annual General Meeting.
,,	25	Meeting at Brooklands.
Apr.	1	M.C.C. Opening Run to Brighton.
,,	8	Oxford M.C.C. Open Hill Climb.
,,	14-17	M.C.C London-Land's End Trial and Easter Tour.
,,	14-17	Herts County A.C. Harrogate Tour and Open Hill Climb.
,,	17	Westmorland M.C.C. Open Hill Climb on Shap Fell.
,,	22	A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,,	29	Bristol B. & M.C. Open Hill Climb.
May	6	Herts. County A.C. Open Hill Climb

Nothing New under the Sun.

The London manager of the Maschinenfabrik Augsburg-Nurnberg, makers of gas engines, informs us that the protected exhaust valve described and illustrated on page 169 last week is identical with the sleeved valve fitted to their gas engines for the past three and a half years. The firm are also makers of the famous Diesel heavy oil engines.

Yorkshire Centre Quarterly Trials.

The writer of "Notes on the Road" in the *Yorkshire Observer* points ont that the A.C.U. should not on any account miss the opportunity of sending the competitors in the Quarterly Trials up Arkengarthdale and past the county's highest inn, Tan Hill, which is 1,72[illegible]ft. above sea level. The Buttertubs Pass is also recommended as a severe trial. Strong nerves are wanted, so the writer says, for on one side of the track the moor rises up sharply, whilst on the other side the hill drops sharply from the edge of the track to the depths below. This should attract motor cyclists.

A sample of the beautiful country roads abounding in the neigbourhood of Redditch—the home of the Enfield.

A Month Hence.

The eighth annual Spring Number of *The Motor Cycle* will make its appearance on March 23rd. It will be an enlarged issue containing special articles and illustrations of absorbing interest. Next week we shall outline its principal contents.

Inter-club Competition at Sutton Bank.

The following clubs will take part in the Herts County open inter-club hill-climb on Sutton Bank on Easter Saturday: Herts County, North-West London M.C.C., North Middlesex M.C.C., Harrogate and District M.C.C., and the Bradford M.C.C. A challenge cup will be offered for the winners of a North *v.* South match. As most of the leading riders from the South will be taking part, some excellent ascents should be witnessed.

An Unlighted Road Obstruction.

A case of interest to motor cyclists and cyclists was recently decided at the Watford County Court, when the plaintiff, a cyclist, secured £22 17s. special and general damages from the proprietor of a furniture van which was left standing in the road with no rear light at Hunton Bridge, on October 30th, 1910. A lamp was attached to the front of the stationary van, but the Judge decided that this was insufficient under the circumstances of the case.

The April Quarterly Trials Course.

The selection of a suitable course in Yorkshire for the A.C.U. Spring Quarterly Trial is having the Union's serious attention. A really stiff route will be found which will easily surpass the January course in severity. No stone will be left unturned to make the trial even a greater success than that held on the 28th ult. A map of the route will be published in these pages as soon as it has been finally selected by the committee.

Speed Limits.

The legal department of the R.A.C. has observed that the Road Board has made grants to various County Councils in respect of dangerous corners, etc., which were the chief reasons for the imposition of some of the existing ten and five mile limits. The department is accordingly in communication with the various County Councils with a view to obtaining the removal of these limits when the necessary works have been effected for which the grants have been made by the Road Board.

Police Traps Again.

Police traps were very much in evidence on the Great North Road last week-end, no fewer than three working between High Barnet and Hatfield—the first, from High Barnet Church through the High Street to the turning on the St. Alban's Road, measuring 220 yards (ten miles limit); the second one between Barnet and Potters Bar, starting from the top of the hill, Duke of York Inn; the third one in the village of Potters Bar, starting at the cross-roads. The timekeepers were dressed as pedal cyclists, and were, we regret, very fortunate in their undertaking.

Miss. L. Berend and her new grey mount—a 3½ h.p. free engine Brough. This lady is a most likely competitor for *The Motor Cycle* Cup in the Herts. County A.C. tour to Harrogate.

Direction Posts.

The General Committee of the R.A.C., having had their attention drawn to the lack of direction posts and the decaying numbers upon them in many places, have decided to ask the associated clubs to approach the local authorities in their areas who are responsible for the erection and maintenance of these posts with the object of securing the provision of new posts where required and the adequate repair and re-lettering of existing posts where necessary. Opportunity will be taken in these cases of urging upon the authorities the desirability of repeating the direction on both sides of an arm, and, in cases where the post has more than one arm at different angles of placing them at varying heights, so that the passer-by may have no difficulty in reading the signs thus separately distinguished.

For Hill-climbing Enthusiasts.

A correspondent writes that he would like to see a hill-climb on Killhope Hill, near Alston, Cumberland, or on the hill leading from Riding Mill to Shotley Bridge. Particulars concerning these hills from local motor cyclists would be of interest to our readers.

The C.T.C. Programme.

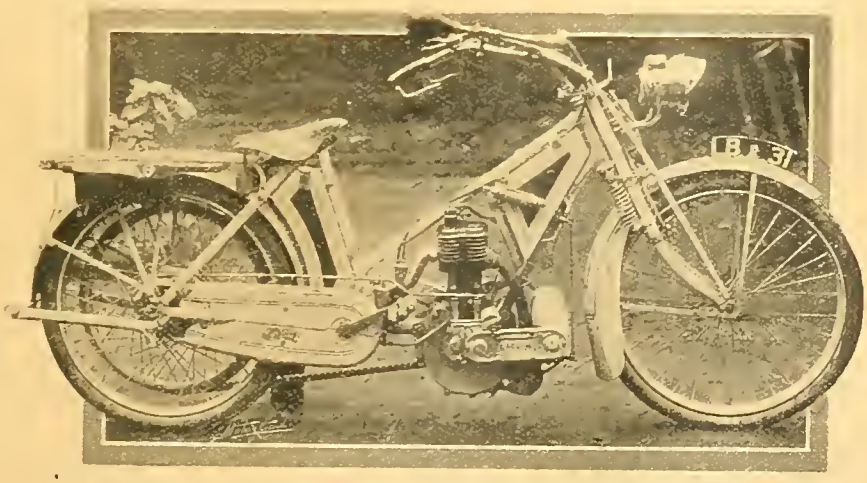
The C.T.C. programme for 1911 is a full one. Motor cyclists are being strenuously catered for, and the new insurance scheme has caught on. Last year new Customs facilities and further steamship concessions were secured. These will probably be extended in the near future, and the legal defence of members of this old organisation is being vigorously continued.

Godfrey and the Indian Tribe.

O. C. Godfrey, the motor cycle hour single-cylinder record holder, informed a correspondent last week that he will be the first claimed rider for the Indian camp this year during all record attempts and speed work at Brooklands. G. Lee Evans is retiring from racing, and may only compete in the A.C.U. Six Days' Trial this year.

Interest in Miss Berend's New Machine.

Seeing a little crowd gathered around a motor cycle in the Upper Street, Islington, on Wednesday afternoon last week, a representative of this journal was much surprised to find it was Miss Lottie Berend and G. Brough just arriving from Nottingham. The former had been to take delivery of her new free engine Brough, which our informant characterised as one of the smartest and neatest ladies' motor cycles he has seen, weighing only 140 lbs. for 3½ h.p. Miss Berend had wonderful control over the machine, taking G. Brough for a ride on the carrier. We illustrate the machine below.



Valve side of Miss Berend's new motor cycle, which is one of the sturdiest and most practical looking ladies' mounts we have seen.

THE VILLIERS HUB CLUTCH.

WE reproduce herewith two sketches which illustrate the working and construction of the Villiers clutch hub, a sample of which we had an opportunity of inspecting a few days ago. The principal claims for this new device are, first of all, its long life and immunity from damage due to careless handling; secondly, its positive action combined with a progressive and silky engagement; thirdly, its simplicity (there are no parts which present any likelihood of getting out of order); and, fourthly, its compactness. This last point is illustrated by the fact that it measures only 3½in. in diameter, and occupies the position of the usual rear wheel hub.

The belt rim is attached by eight tubular spokes to a drum at one end of the hub, the axle of which is fixed and bored at one end to receive the actuating pin. The clutch surfaces themselves consist of a series of half tubes—that is to say, they are semi-circular in section. These are alternately phosphor bronze and steel, and are likewise alternately connected up, one set to the belt-rim drum and the other set to the shell of the hub (to which the road wheel is spoked) by

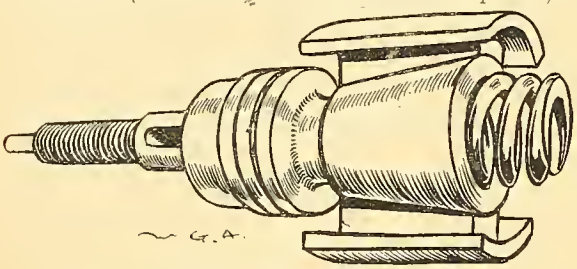


Fig. 1—The expanding mechanism.

means of lugs attached to the plates which repose in slots cut in the end plates of the shell.

In order to engage the clutch the half tubes are expanded outwards against the inner periphery or liner of the hub shell (which is of phosphor bronze keyed into position on the shell itself), and so press against one another.

This operation is accomplished by a stiff spring which actuates a cone mounted on the axle, the cone expanding four cast steel fillets which press against the innermost pair of half tubes. The disposition of these is set forth in the second sketch, the steel half tubes being represented by solid black and the phosphor bronze ones by white. This figure also shows how they are split.

A Gradual Engagement.

The clutch surfaces run in oil, and there is therefore a complete absence of "snatch" in the engagement. Further, it is the spring acting on the cone which engages the clutch, and therefore it cannot possibly be harsh, unless from neglect in lubricating, and, in fact, the foot can be suddenly removed from the operating pedal without causing any jar on letting in the clutch suddenly.

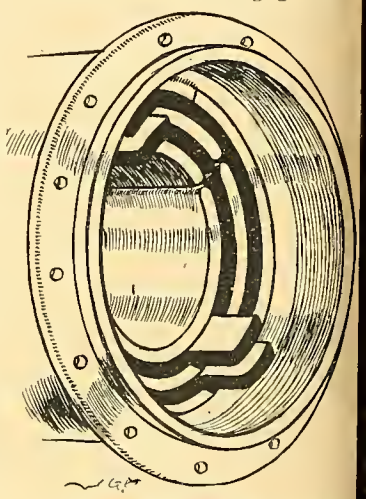


Fig. 2—Hub shell showing the steel half tubes (solid black) and the phosphor bronze tubes (white).

Fig. 1 shows the expanding mechanism. The actuating rod passes inside the axle, and is secured to a crosshead working in a slot. Between this crosshead and the cone is a ball thrust washer. In this figure only two expanding fillets, which work on the inclined plane principle, are shown. The clutch hub is throughout excellently constructed, and has passed through its tests highly satisfactorily. It is made by the Villers Gear Co., of Blakenhall, Wolverhampton.

THE FOOL AND THE FOOLPROOF MACHINE.

By "IXION."

A CANNY Scots engineer takes objection to some recent remarks of mine upon the desirability of the foolproof perpetual motion two-wheeled perambulator. His point is that foolproof motor cycles are undesirable, and he sends me an interesting report of a debate at the Association of Electrical Engineers. Mr. W. A. Wilson there contended that the principle of "foolproofing" should not be unduly extended.

He asserted that there are two classes of fools. The first type of fool is the person who is "invincibly ignorant," and would never learn sense even if an archangel stood constantly at his right hand. The second type of fool is the person who might become wise, if he would take the trouble to educate himself.

According to Mr. Wilson, the first type of fool should apparently be squeezed out of the engineering world as rapidly as possible, and there is no need, therefore, to foolproof machinery for his benefit. The second type of fool is represented as less hopeless and in his interests the foolproof machine is to be deprecated, because it does not provide education. My correspondent concludes that by similar reasoning the foolproof motor cycle is a mistake.

It is all a question of the purpose for which motor cycles are made, sold, and bought. Do they exist to educate the unmechanical public in things mechanical or do they exist to provide a cheap means of reliable locomotion?

By the reasoning employed above, nobody should be allowed to travel on the Scotch express unless he is qualified to drive or stoke its engine, and maiden aunts should be forbidden to use taxicabs until they know how to fasten a Stepney wheel. The motor cycle has several excuses to offer for its existence, but its real justification is that it provides cheap and reliable locomotion. From this standpoint, the more it can be foolproofed the better.

THE 1911 TOURIST TROPHY RACE.

Manx Authorities' Decision does not affect the Fifth Annual Motor Cycle Race. Singles v. Twins.

THERE has been for some time talk of a "3-inch" motor car race in the Isle of Man this year, but the Royal Automobile Club did not fit to issue a permit, and in consequence Island authorities have decided to let the matter op for the time being. It is practically cer-n, however, that this decision will in no way affect holding of the Tourist Trophy Motor Cycle Race—event which has been called the "Motor Cyclist's rby," and is considered to be the chief sporting nt in the motor cyclist's year. At the present time re is still some doubt as to what form the final angements will take. Even the course has not yet n fixed upon. The A.C.U. has wisely settled upon course utilised by the cars in the 4-inch race in 09, as this would prove the finest test of motor ycle engines ever organised, but the Manx High-y Board has not yet come to any decision as to ether it will sanction the use of this course. One the most important reasons for the inclusion of the d over the mountain is that it will test the cooling the engines in a manner never before attempted. l it is the cooling of motor cycle engines which ds a great deal more attention at the hands of igners. Motor cyclists in England do so little untain work that the subject is one which has been newhat neglected by manufacturers, but those o love the beauties of mountain scenery in the four ntries which make up the United Kingdom, among Alps, in India, Ceylon, and other countries re the pastime may be enjoyed, are fully aware how badly improvements are needed to overcome the overheating propensities of air-cooled engines.

Are Small Twins Wanted?

Another interesting feature of the race is the deadlock between the A.C.U. and the trade as to whether twins are to be included or not. There is but one Tourist Trophy, and the A.C.U. has endeavoured to level up twins and singles so that both shall have an equal chance. But many manufacturers who are members of the C. and M.C.M.T.U. are of the opinion that a twin-cylinder engine of the capacity decided upon (585 cubic centimetres) would not command a ready sale. They also object to the methods employed for arriving at a fixed cubical capacity for twin-cylinder engines, and argue that however carefully the formula is worked the race between a single-cylinder engine of 500 c.c. and a twin of 585 c.c. can only result in a rough and ready handicap. Now there are many supporters of the multi-cylinder motor cycle, and the views of individual users would at the present time be welcomed. Our correspondence columns are open to those who wish to air their views, and some interesting discussions might well be introduced on this subject. Meanwhile entries are rolling in, and the race will doubtless be a great success. The fact that the race will be held in July will enable a large number of riders to visit the sporting little island whose generous House of Keys legalises the only motor cycle road race which it is possible for us islanders to hold.

An Army officer at Beluchistan, who, since last August, has ridden his 1910 Triumph 2,000 miles, but never once has the engine failed or given him the slightest trouble. Incidentally he mentions that the Dunlop tyres and Dermatine belt have lasted splendidly.

SATURDAY'S RELIABILITY TRIAL IN THE MIDLANDS.

The course for the Sutton Coldfield A.C. open reliability trial, to take place on Saturday next, is given below. The start is at 9.30 a.m. from the Gun Barrels Hotel, Bristol Road, Birmingham, and the route *viâ* Selly Oak, Rose Hill, Bromsgrove, Alcester, Stratford, Sunrising Hill, down Edge Hill, up Warmington, to Banbury (lunch Red Lion Hotel), returning by the same route to Alcester, and then direct Birmingham Road to tram terminus, Alcester Lane's end. The schedule speed is 19 m.p.h. The rules are a commendable departure from the stereotyped form. Each competitor will be given 200 marks as maximum, and marks will be deducted for minutes early or late at controls, and for any failures on hills or involuntary stops. Difficulty in starting will entail a loss up to five marks, whilst a limit of ten may be deducted for machine or rider finishing in an unreasonably dirty, muddy, or oily condition. The first award is the Colmore Cup and a gold medal, whilst silver medals will be presented to all making non-stop runs within schedule time. There are already a good number of entries.

THE MOTOR CYCLE Eighth Annual Spring Number
will appear on
Thursday, March 23rd.

NORTHERN LEAGUE OF MOTOR CYCLISTS.

A council meeting of the Northern League will be held on Saturday, March 4th, at the Old George Hotel, York, at 6 p.m. prompt. Members of the council are asked to note this date and endeavour to attend the meeting, as important business will be transacted, one item of which will be the drafting of th official programme of events to be held during th year. Secretaries are invited to send any suggestio as to the League's programme to the trials secretar any time before the date of the meeting.

THE RICHMOND MEET, 1911.

The secretary of the Northern League of Motor Cycle Clubs will be glad to hear from any motor cyclists residing in Richmond (Yorks.) or neighbourhood who would kindly help the officials of the League to carry out this year's programme. It is expected that visitors to this the fifth annual meeting of motor cyclists will be larger than ever before. Help will be gladly welcomed, as it is hoped to mak this year's programme very attractive and th meet another record one. Between four and fi hundred attended last year. Offers of assistance shoul be addressed to Mr. Geoffrey W. Liddle, 367, Lin thorpe Road, Middlesbrough (local hon. secretar for this meet).

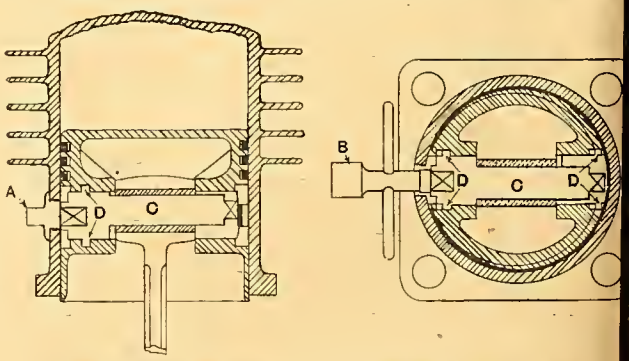
A CURIOUS LICENSING CASE.

A READER of *The Motor Cycle* took out a local taxation licence to keep a motor car in the early part of last year. The car was sold in April, but a motor cycle was purchased in October. Now our correspondent was of the opinion, and rightly so, that the motor car licence, costing two guineas, entitled him to keep a motor cycle, the licence for which at the time was £1. He took the car licence to the Post Office and asked the officials to exchange it for a motor cycle licence. This they would not do, but referred the applicant to the Finance Committee, who eventually replied to the effect that he was liable to pay duty in respect of his motor bicycle. This he refused to do, was summoned, and fined 10s. and £2 costs.

Now, on May 2nd, 1910, we received a letter from the Comptroller of the L.C.C., local taxation licences branch, that in similar circumstances "th licence would cover one vehicle only the rate of du in respect of which does not exceed two guineas. There seems to be no doubt, therefore, as it is on reasonable to suppose, that a motor car licen entitles the holder (if the motor car be sold) to kee one motor cycle. But the unfortunate part of o friend's case was that his licence expired on Ju 31st last year, when the Finance Act came into forc and therefore was null and void at the time he aske permission to keep his motor cycle under it. Th point certainly appears to have escaped the applicant memory. We have put this case before the A.C.U solicitor, and he is of the opinion that had th applicant put the circumstances of the case clear and accurately before the Finance Committee, h request would probably have been granted.

A VARIABLE COMPRESSION DEVICE.

VARIOUS devices have been submitted to us from time to time for varying the compression ratio of motor cycle engines. These usually take the form of some method of increasing and decreasing the combustion space by means of a movable combustion head, etc. The latest device, and one which we do not think has been attempted before, takes the form of an eccentric gudgeon pin. When the compression ratio is to be varied the piston is placed at the bottom of its stroke. The plug A in cylinder wall is taken out and a key inserted in the square hole in the end of the gudgeon pin C. End pressure causes the gudgeon pin to move inwards and causes the studs D, which are milled on each end of the gudgeon pin, to move out of the slots provided in the piston. The gudgeon pin is now turned round in the piston lugs, and according to the position in which it is left the piston is raised or lowered relative to the centre of the small end of the connecting rod. Several slots are provided, so that intermediate positions are obtainable. When end pressure on the gudgeon pin is released it is automatically forced back into the working position by the pressure of a spring (denoted by a thick black line) which encircles the piston and works in a groove turned to receive it. The device has been provisionally pr tected by Mr. Geo. Tagg, Ashfield Foundry, Ne castle, Staffs. The patentee's ingenuity is to be high commended, but as there is a great tendency f gudgeon pins to hammer themselves loose, unless he



Sectional elevation and plan of G. Tagg's variable compression device.
A. Screw plug. B. Key. C. Eccentric gudgeon pin.
D. Studs on gudgeon pin.

rigidly by a taper or set screws, we imagine that th gudgeon pin, if left sufficiently free to be turned by a of the key, would very soon cause a rattle.

Derby Club's Winter Reliability Trial.

Sixteen entries were received for this event, which was eld last week-end to Buxton and back. At the start 100 arks were allowed, four being deducted for each minute efore or after schedule time. The time allowance was as llows: Derby to Matlock, 1 hour; Derby to Buxton, 2¼ ours; Derby to Ashbourne, 3½ hours; Derby out and home, ½ hours. Fine weather was experienced till near the end f the run, but a strong wind was blowing against the ders, especially on Taddington Hill. Some fun had been xpected on the limestone roads round Buxton and district, ut the effect of the high wind was that the roads were in onderfully good condition considering the time of the year.

A Home-made Lightweight.

Russell's performance on his 1½ h.p. Russell (own make ngine and bicycle) was considered really good, as although was a case of getting up Taddington as best he could ving to the high wind, and being twenty minutes behind at uxton, he was only five minutes behind time on arrival at erby, the little engine having purred along in the finest yle on none too easy roads. Taylor, on the Rudge, lost me through missing the check at Buxton, and Clarke radbury) dropped some minutes by stopping to give petrol another competitor who had run out of the precious fluid.

W. H. Orme, on the Humber, had various lamp troubles, d also a collision with a dog in riding through Brailsford the dark. The dog, as is usual, got the best of the fray, rme suffering some few cuts and bruises. His machine was also considerably damaged. The performance of A. Ainsworth with the Peugeot and sidecar was very good, he being only one minute late at Ashbourne, and the finish, through mistaking the time. The positions were as follows:

Official Results.

		Minutes lost. Matlock	Buxton	Ashbourne	Derby
1.	G. Brough (3½ Brough) ...	0	0	0	0
2.	A. Ainsworth (7 Peugeot and sidecar)	0	0	1	1
3.	A. E. Mitcham (3½ H.M.-Jap)	1	0	1½	½
4.	E. V. Clarke (3½ Bradbury)	½	2	½	5
4.	V. Jobson (3½ Bradbury) ...	0	7½	½	0
4.	A. B. Clay (3½ Bradbury)	1	3	0	4
5.	Dr. F. A. Sharpe (3½ P.& M.)	0	5	1¼	2
6.	G. H. Taylor (3½ Rudge) ...	2	3	2½	3
7.	S. Webster (3½ Bradbury)	1	2½	1½	9
8.	Edgar Russell (1½ Russell)...	0	20	16	5
9.	W. H. Orme (3½ Humber) ...	5	13	22	32
10.	J. Barlow (8 Chater-Lea and sidecar)	—	—	—	—

J. Barlow experienced trouble, and drove no further than Ashbourne—his home.

The best thanks of the club are due to Messrs. R. W. Deane, C. S. Burney, and G. Smith, checkers at Matlock and Buxton, and the Rev. R. H. Bond, who undertook the check at Ashbourne.

BIRMINGHAM M.C.C. LAND'S END TRIAL.

The arrangements for the Whitsuntide trial to Land's End d back for the Lycett trophy are rapidly nearing comple-n. It is proposed to run the competition as a reliability al, with a minimum of checks, from Birmingham to Land's nd and back, taking absolutely the shortest and most direct ute *vid* Gloucester, Bristol, Taunton, and Launceston. The hedule time for standard machines will be about fourteen urs each way, and for lightweights about two hours longer. here will be no controls, and all food, petrol, etc., will have be obtained in running time. The winner will be found the competitor who runs nearest to schedule time in two cret checks, the section on the outward journey being tween Bodmin and Redruth, and on the return journey between Worcester and Birmingham. The outward journey will be on the Saturday before Whit-Sunday and the return journey on Whit-Monday.

Forms of application for membership of the club will be forwarded on application to Mr. S. C. Perryman, 29, Albert Street, Birmingham, who has the preliminary arrangements in hand pending the appointment of a special trials hon. sec. for this event.

The following entries have already been received: R. W. Duke (captain) (3½ h.p. Zenith), S. C. Perryman (vice-captain) (3½ h.p. Ariel), P. Brewster (3½ h.p. Norton), J. L. Norton (3½ h.p. Norton), Harold Cox, A. Douglas Arter (3½ h.p. James), and S. K. Jones (3½ h.p. L.M.C.).

BROOKLANDS FIRST 1911 MEETING.

In addition to seven events for cars and one flying com-tition, to be held at Brooklands on Saturday, March 25th, o motor cycle events are included in the programme. tails:

The FIRST 65 M.P.H. MOTOR CYCLE HANDICAP.—r all classes of motor bicycles whose observed speeds have t exceeded 65 miles an hour for a Brooklands flying lap, in the case of cycles which have not competed before, ich are not likely, in the opinion of the handicappers, to ceed this speed. Starters barred. Entrants to state on ir entry forms whether or not their engines are furnished th drilled cylinders or auxiliary exhaust ports. Distance out 5¾ miles.

THE THIRD 70 M.P.H. MOTOR CYCLE HANDICAP. For all classes of motor bicycles whose observed speeds ve exceeded 60 miles an hour for a Brooklands flying lap. which are likely, in the opinion of the handicappers, to ceed this speed. Starters barred. Entrants to state on ir entry forms whether or not their engines are furnished th drilled cylinders or auxiliary exhaust ports. Distance out 8½ miles.

In each case the entrant of the winner to receive 10 sovs. cup at option; the entrant of the second 5 sovs. or cup option; and the entrant of the third 3 sovs. or cup at ion.

Twenty-five entries, or the race may be void at the option the executive; or, if not void, the number and value of prizes may be reduced.

To close March 15th, 1911, at 12 noon. Entrance, . 6d. p.p.

B.M.C.R.C. FIRST 1911 MEMBERS' MEETING.

The programme of events for the meeting on Saturday, March 18th, at Brooklands, is as under:

2.0 p.m. ALL COMERS' PENALTY HANDICAP, for motor cycles of any type and fitted with any size of engine. Distance about 8 miles (3 laps). The handicapping will be based on the results of a trial run, riders whose time in the race differs by more than five seconds per lap from that in the trial run being disqualified. Entry fee, 2s. 6d.

2.30 p.m. THE FIRST JUNIOR ONE HOUR TOURIST TROPHY RACE, for lightweight motor cycles complying with the 1911 T.T. regulations except that purely touring accessories, such as mudguards or toolbags may be removed. Entry fee, 5s.

3.45 p.m. THE FIRST SENIOR ONE HOUR TOURIST TROPHY RACE, for heavyweight motor cycles complying with the 1911 T.T. regulations except that purely touring accessories, such as mudguards or toolbags, may be removed. Entry fee, 5s.

Starters will be allowed in each event. Entries close last post, Saturday, March 11th, to the honorary secretary, T. W. Loughborough, Highcliffe, Shooters Hill, Kent.

At the annual general meeting of the Scottish Cyclists' Union, to be held at the Royal Hotel, Dundee, on Saturday, the 25th inst., a motion has been placed on the agenda which reads: "That no person engaged in the motor cycle trade be appointed judge or handicapper for motor cycle competitions." The Motor Cycle Sub-committee of the S.C.U. will, we understand, submit a recommendation opposing the motion.

Derby and District M.C.C.

The balance sheet of the above club on last year's working shows that the receipts amounted to £18 11s. 4d., and expenses £15 2s.

Southend-on-Sea M.C.C.

The above club was duly formed at a meeting last week, named as above, the annual subscription to be 7s. 6d. Headquarters are the Alexandra Hotel, Southend-on-Sea. Competitions will be a feature of the club's programme. This evening (Thursday) at 8.30 a further meeting will be held at headquarters. All local riders are invited.

High Wycombe and District M.C.C.

A club has been formed in High Wycombe called the High Wycombe and District Motor Cycle Club. There are already twenty members. It is proposed to hold several competitions during the year, and a cup has already been promised for a 100 miles reliability trial to be held in July. Any motor cyclist in the district can learn all particulars on applying to the hon. sec., R. Pugh, 242, Desboro' Road, High Wycombe.

Herts County A.C. (Motor Cycle Section).

Mr. B. H. Davies has kindly consented to act as judge in the Amateur *v.* Trade Trial on May 20th. No entrance fee will be charged for this event, as an amount sufficient to cover all expenses was subscribed privately during the annual dinner on Thursday last. Lady motor cyclists wishing to take part in the Harrogate tour for "The Motor Cycle" Cup will oblige by communicating with Mrs. C. C. Cooke, North Mimms, Hatfield.

Bishop Auckland, Darlington, and District M.C.

The A.G.M. was held on the 16th inst., when the hon. secretary, Mr. R. B. Thompson, reported an increase in membership from eighty-two to 130, of whom 102 are motor cyclists.

The club has received a handsome silver challenge cup from Mr. C. W. Smith, to be awarded as an aggregate prize in 1911 competitions, a gold maltese cross from an old Auckland boy, now in Warton, New Zealand, a gold medal from the Triumph Cycle Co., and a silver cigarette case from the Rex Motor Mfg. Co. The treasurer reported a balance in hand of £12 15s.

Norfolk M.C.C. (Great Yarmouth).

The dual function of the A.G.M. and dinner took place last week at the Café Royal, Great Yarmouth, under the presidency of Mr. H. R. Culley. It was agreed that in future the name of the club should be the Norfolk Motor Cycle Club (Great Yarmouth), the bracketed name to be retained for one year. The officers for the year were elected or re-elected as follow: President, Dr. Mayo; vice-president, Mr. H. R. Culley; captain, Mr. R. O. Clark; hon. secretary, Mr. R. H. Williams; hon. auditor, Mr. W. J. C. Thorold. The old committee were re-elected, with Messrs. Lacey, Collins, and Master to fill vacancies.

Glasgow M.C.C.

This club held its first annual dinner at the Corn Exchange Restaurant, Glasgow, on Thursday last, when Mr. John Gow, one of Glasgow's veteran cyclists, and a recent convert to the motor cycle, presided over a company of fifty-seven. The prizes won in last season's competitions were presented during the evening, and a really excellent musical programme was provided. Speeches were few and brief, but there was a general feeling that the club should endeavour to obtain a more representative membership. The premier Scottish club at the moment is undoubtedly the Edinburgh M.C.C., but with some new blood and an energetic programme it is hoped that the Glasgow Club will at least hold its own. The first annual dinner was an undoubted success, and the arrangements reflected great credit on Mr. A. Gordon Bostock, the popular hon. sec.

Hull and East Riding A.C.C.

A very enjoyable entertainment was provided the other night in the form of a smoking concert and distribution of prizes by the president, Dr. W. H. Coates. The annual general meeting will be held on March 1st next, when all motor cyclists will be welcomed.

Jocker-Bill M.C.

The above club is holding a hill-climb at a secret venue on March 4th. The opening run on Saturday to Newcastle was followed by a dinner. A team of three members will probably enter for the London-Edinburgh run.

West Essex A.C.

One of the chief features of the West Essex A.C. annual dinner was the very excellent and artistic programme, which contained pictures of all the best known officials of the club, a list of the prizes won during 1910, and reproductions from photographs of various events, both during last year and during the club's existence. The programme is further enlightened by some excellent sketches by Mr. W. Jeremy.

North Middlesex M.C.C.

This newly-formed club, which now boasts of a membership of over forty, is holding a Bohemian concert at Beale's Assembly Rooms, Holloway Road, N., on March 4th, at 7.30, for the purpose of enabling members and propective members to become acquainted with one another. A very attractive programme has been arranged, and several artistes of exceptional talent have promised to support the venture. Tickets and all information can be obtained of the hon. sec. D. Grey Blakey, Heathfield, Highgate, N.

Durham and District M.C.C.

A fault-finding competition has been arranged to take place on March 1st, at headquarters, Neville's Cross Hotel, Durham, at 7 p.m. There will be a run to the Northern meet of motor cyclists at Richmond on Good Friday. A reliability trial is also being arranged for Easter Monday, and will include a timed ascent of Killhope from Wearhead. Gold, silver, and bronze medals will be awarded. All motor cyclists in the district are cordially invited to attend the above, and any new members wishing to join should communicate with the hon. sec., R. W. Holmes, Dunster House, Durham.

Scottish Border M.C.C.

An enthusiastic meet of the above club was held in the Court Room, Hawick. The hon. secretary, Tom Gillies, reported a membership of fifty-four up to date. Capt. Fyfe Jamieson was elected hon. president, and R. Scott Noble hon. vice-president. Rev. John Gordon, a well-known local enthusiast, was unanimously elected captain for 1911. Messrs. Tom Scott and Wm. Johnstone, vice-captains; John Martin, assistant secretary. An interesting programme of competitions was drawn up, including a twelve hours' reliability trial and several hill-climbs. The hon. secretary, whose address is 83, High Street, Hawick, will be pleased to hear from others interested in the movement.

Streatham and District M.C.C.

On Friday last, the 17th inst., many members of the above club gathered at headquarters, Crown and Sceptre Hotel, Streatham Hill, to hear a lecture on Magnetos, by Mr. A. Bennett. After the lecture a discussion was opened and Messrs. Hunter, Sherwell, Feesey, Mundy, Ayers, Pratt, Johnston, and others asked for enlightenment on knotty points, all of which Mr. Bennett very lucidly explained. The club is forging ahead rapidly, many new members coming up for election at every meeting. On March 3rd, at 8 p.m. at headquarters, Mr. J. W. G. Brooker will give a lecture on "Lubrication," and on March 17th Mr. A. E. Bennett (late R.A.C. examiner) will deliver a lecture on "Electricity and Magnetism" at the same time and place. Prospective members are heartily welcome

News.—

Dublin and District M.C.C.

t the annual general meeting of this club very satisfactory rts were presented by the hon. officers, the treasurer rting a bank balance of £10 after the discharge of all lities. Mr. F. J. Walker, 9, Grafton Street, who has dis-ged the duties of hon. sec. since the departure of Mr. mbers from Dublin, was permanently appointed to that tion.

Ilkley and District M.C.C.

n the 3rd prox. there will be a "breakdown competition" eadquarters, the prizes being some useful motor cycle ssories, presented by Messrs. Denby and Co., of Ilkley. he same night there will be a smoking concert. April is the date of the club's opening run, the venue being mond, to attend the meeting of Northern motor cycle s.

Purley and District M.C.C.

feature of the 1911 programme is to be a large number mpetitions, as three cups have been put up for competi- by the club president, Mr. S. F. Edge. One of these petitions is to take the form of a long distance reliability

e A.G.M. was held last week at Wilson's Oriental Café, don. The following officers were elected for the year: tary, Mr. E. M. Oliver; captain, Mr. W. G. Fowler; captain, Mr. W. Borer; treasurer, Mr. D. H. Ebbutt; mittee, Messrs. S. J. Tayler, H. S. Brett, L. F. Ebbutt, oughby, and A. I. Riminton.

SCENES AT THE FIRST HILL-CLIMB OF THE CAPE PENINSULA MOTOR CYCLE CLUB.

Thornton (3½ h.p. Bradbury) at the ng line. He was the winner, beating Horsfall (3½ h.p. Triumph) by two-fifths second.

hill-climb was held on the 21st on the Groote Schuur estate, ised by the Cape Peninsula C. The hill is 1,500 yards The winner, J. Thornton, a 3½ h.p. Bradbury, his time 1m 44⅘s. The second and third rcde Triumphs, their names R. B. Horsfall and D. A. Pirie. following also competed: A. as (3½ h.p. Triumph), A. Keyzer p. Scott), B. Kuhn (3½ h.p.), T. Widdowson (3½ h.p. er), and B. Versfeld (3½ h.p. d M.) This competition was the rganised by the club, and proved at success.

Burnley A.C.

The motor section of the Burnley Victoria Motor and Cycle Club has been reformed under the above title. The first general meeting was held at the Yorkshire Hotel, on the 22nd ult., at 7.45 p.m.

A Suggested South East London Club.

Mr. V. Edwards, 9, Honor Oak Park, London, S.E., informs us that he is anxious to found a motor cycle club for riders living in Forest Hill, Sydenham, Peckham, Catford, and the surounding districts. Those interested are requested to correspond with him at the above address.

Halifax and District M.C.C.

There was a large gathering of members at the general meeting of the above club on Wednesday, February 8th, at headquarters, the Old Cock Hotel, Halifax. After the accounts of the club for the past year had been passed and the new officers elected, Mr. Youngman, the retiring hon. sec., in his annual report, referred to the better attendances at both the meetings and runs and to the generous help which trade members had given by coming forward with special prizes. The name and address of the new hon. sec. is Mr. Francis E. Jackson, 42, Commercial Street, Halifax.

NORTH-WEST LONDON M.C.C. v. HERTS. COUNTY A.C.

The Harrogate Tour at Easter.

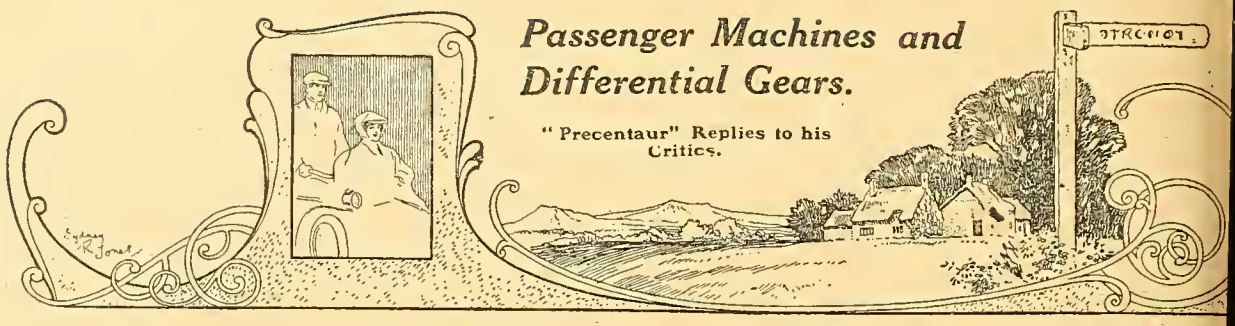
This tour will start from the Red Lion, Hatfield, on Friday, April 14th. The route will be *viâ* Biggleswade, Peterborough, Lincoln, Sleaford, and Doncaster, and next day a hill-climb will take place near Harrogate. On Monday the return journey will be made over the same route.

Apart from the competition with the Herts County Club, a hill-climb will be arranged between the North-West London Motor Cycle Club and the Harrogate M.C.C.

The teams of the N.W.L. and Herts County will consist of twelve riders, the Service Cup being presented to the club whose team (the nine best individual performances taken into account) scores the most marks. The marking will be thus: 100 for the outward journey, 100 for the homeward, and 50 for the hill-climb.

As regards the N.W. London M.C.C. the awards will be: A gold medal for 93% of the marks; a silver medal for 88% of the marks; a bronze medal for arriving at destinations within one hour of schedule time. There will also be a special prize presented for the best individual performance by a member.

At the foot of the hill. Competitors discussing their chances.



Passenger Machines and Differential Gears.

"Precentaur" Replies to his Critics.

IN *The Motor Cycle* of February 9th two correspondents refer to points connected with my suggested design for a light two-seated tricycle.

"F.C.T." may perhaps be surprised to learn that a light four-wheeler with central chain drive, live axle, and no differential was built in South London some five years ago. After it had been driven over two thousand miles the owner informed me that in driving it was impossible to detect the absence of the differential. I had a short run on it as a passenger, and its behaviour at corners appeared in no way different from that of other four-wheeled vehicles, while I was assured that it was not hard on tyres.

This, of course, is opposed to theory and practice, but I can put "F.C.T." into communication with the engineer who fitted the axle in accordance with the owner's orders. At the time the engineer in question was doubtful as to the success of the experiment, but apparently it worked out all right, for when I last heard of it, it was still running.

Then as to skidding round corners after the style of racing cars, I can assure "F.C.T." that a sidecar can be skidded round a right-angle turn at speeds of 20 m.p.h. and upwards. I have frequently done this myself, with the chair *outside*, but, owing to the peculiarities of sidecar construction I take no liberties when the chair is *inside* the bend.

Certain hill-climbing sidecar experts can skid round bends in either direction; they have my respectful admiration, but I cannot hope to emulate them. Still, a tricycle on the lines I suggest would be at least as safe on corners as a sidecar with the chair outside, and that is quite safe at all reasonable speeds.

The Dead Axle Drive Explained.

Much of the foregoing also replies to Mr. Ralph Wicksteed's letter [5348], but he has apparently misunderstood the design suggested for the back axle.

In my design the axle is "dead," the two rear wheels running on ball bearings exactly the same as those of a trailer. Thus in order to obtain the necessary small amount of slip one belt would be required to overrun slightly on the front pulley, which, in practice, it would very readily do. As soon as the outside wheel begins to accelerate, the belt tends to overrun the front pulley, the rear wheel becoming the driver, and the front pulley, if it were free to do so, would be driven, but although the speed of the front pulley cannot be accelerated it continues to revolve at the same speed as its fellow, which drives the inside wheel, and Mr. Wicksteed will readily understand that it is not a very difficult matter to produce a little slip on a small pulley, bearing in mind that the pull on the belt is suddenly changed from the upper to the under s and that the belt is merely required to accelerate slightly round a small pulley which is already run fast.

Tyre slip, whether rotative or sideways, would h but for practical purposes may be left out of argument, and for very severe bends I cannot see valid objection to opening the pulley grooves, w would then fill the place of a clutch. Would Wicksteed object to declutching on a car negotiating hairpin bends?

Further, I can refer him also to the small wheeler with solid live axle and chain drive previ referred to.

Turning in the Road.

Turning in the road width should be possible i roadway were wide enough for a car to turn wi reversing; if not I certainly should not make a l ship of it, but open up the pulleys and push it ro No doubt this would be unnecessary, for as the became slacker one would drive and the other and though the engine might race, still we wou surmise, get round under power.

A point that should not be overlooked in conne with tricycles is the tremendous lock which a s steering wheel gives. This, in itself a recomm tion, renders a tricycle dangerous in the hands o unused to the type, who is apt to try to take co at sharp angles and speeds that would be unsaf a bicycle.

Finally, where expense is no object, by all m include a differential gear and chain or shaft but if cheapness is wanted some of the alterna snch as belt drive, will enable the differential ge be dispensed with.

Lightness of Frame and Body.

As regards frame and body work, the latter s be as light as possible; a scuttle dash might be by stretching patent leather over a frame, and metal doors or leather flaps might fill in the The front of the body would, of course, ha aperture for the air to reach the cylinder, and proved too cooling for the passengers it wou necessary to make a through passage for th Possibly, however, the air, after passing ove engine, would warm the riders instead of cooling but it could not be less comfortable than a bicycle with a Cameron or Miller mud shield they are considered fairly cosy for a two-wheel

At the worst, footboards and two aprons woul both driver and passenger the same protection sidecar passenger now enjoys alone.

STABILITY.

his article, Mr. G. D. Leechman shows us the higher the centre of gravity of a motor cycle is situated the easier it is to maintain the system in ilibrium.

ou can, however, look at it from another point of v, as the following shows.

t is quite true that it is easier to balance a broom h the heavier end uppermost, but one must not get that in practice it is hardly correct to liken a or cycle to a broom, for the road takes the place he hand, and, since it is impossible to move the l, the machine itself must be moved to obtain the essary righting effect.

uppose in the figure shown (1) B represents the r and machine, and C represents the road. The

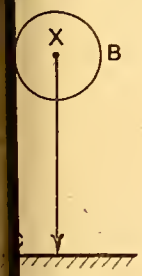


FIG. 1.

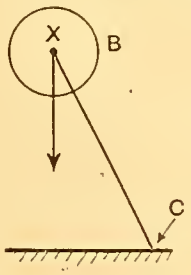


FIG 2.

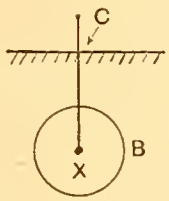


FIG 3

re of gravity of machine and rider can be assumed e at X, the centre of the circle B.

B moves out of the vertical (fig. 2), its weight g downwards through the centre of gravity of B will to bring B to the ground. Now to bring the whole m into equilibrium again all that remains to be is to bring C into such a position that the centre ravity of B is directly over C—the point of sus- ion of the system. So far so good. Mr. Leechman bring point C under X [centre of gravity of B] all is well.

his can very easily be done with a broom, but in ase of a motor cycle C cannot be suddenly moved because the friction between the road and tyre will prevent you doing this in a direct manner, but indirectly the whole machine may be swerved into the required position, provided the machine be travelling so fast that it—C—can be moved in an exceedingly short space of time.

Under touring conditions this swerving action must take an appreciable time, and it can be easily seen that this mode of balancing the machine will require great "knack" on the part of the rider.

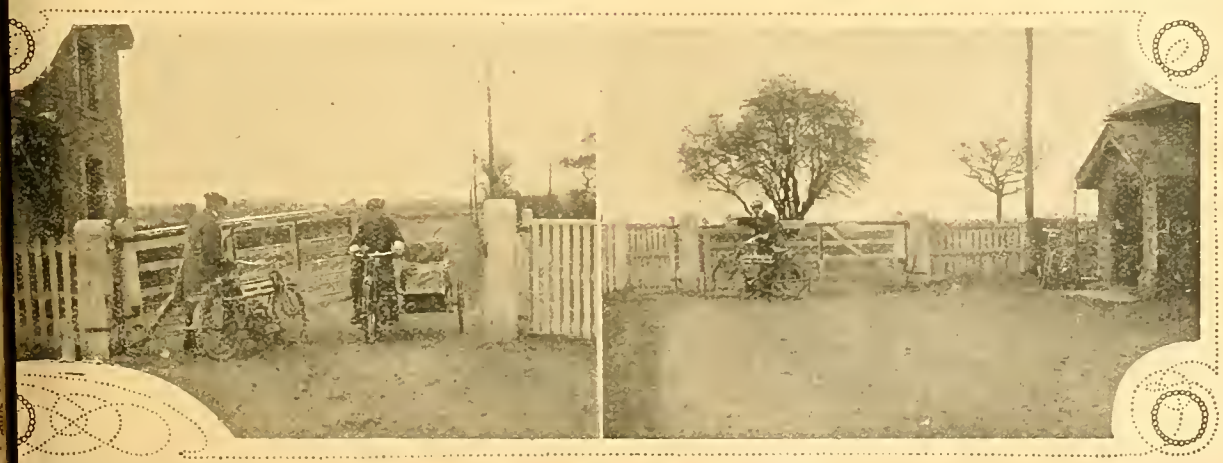
What is wanted is a machine which will balance itself with the smallest possible outside aid. This can only be done by bringing the centre of gravity of the system X nearer and nearer to the point of suspension C, for when X is at C, B would remain in any position in which it were placed.

If X be placed below the centre of suspension C it can be seen that the whole system will remain in equilibrium under the action of gravity (fig. 3).

Now, if we apply this to the motor cycle, it can all be summed up by saying if we could place the centre of gravity of rider and machine below its centre of suspension—that is, the contact of tyre and road—the whole system would be automatically stable, and would require no effort on the part of the rider to maintain the system in balance.

But we cannot do this, and therefore our next best thing to do is to get as near to the above ideal as possible; that is, to place the centre of gravity of machine and rider as near to its centre of suspension as possible, or, in other words, to place the centre of gravity of machine and rider as low as possible.

I think this will show that your contributor, Mr. Leechman is wrong in assuming that a high saddle position gives a greater factor of safety on a greasy road than a low saddle position, under practical conditions. Although it is true that the longer the broom handle is the easier it is to maintain it in a vertical position, yet I think this is mainly due to the resistance of the long handle to motion caused by the movement of it through the air. C.L.W.



A DANGEROUS UNLIGHTED GATE NEAR BEVERLEY.

t is situated on the Beverley-York Road at the entrance to Beverley Westwood and is closed all day and night between May and January. No light is placed e gate, despite the fact that all traffic from Hull and Beverley goes down this the only main road to the North. The gate has been the subject of much yance and danger to motorists for many years, but being the property of the Beverley pasture masters, who will not bear the expense of railing in the wood Common for many miles, its removal has not been sanctioned. Many accidents have been caused by it not being lighted, and several cars have right through it.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should b addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or no must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, an on one side of the paper only, numbering each query separately for ease of reference. Letters containing lega queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questio bearing on technical subjects.

Non-slipping Transmission.

I have lately taken to riding a Scott chain-driven machine, having previously used belts. It has been suggested to me that, in case the engine seized or stopped suddenly from any other reason, there would be nothing to slip, and I should be shot over in front. This has rather alarmed me. Can you tell me whether, in such a contingency, a chain might snap, or the gear slip sufficiently to avoid a bad accident? This possibility does not seem to alarm riders of other chain-driven machines, and I do not remember having heard of such an occurrence. Would seizure be sudden, or gradual, and what would be the preliminary signs?—CHAIN DRIVE.

In the case of engine seizure two things might happen—(1) a chain might break, and (2) whichever of the two-speed clutches was in engagement would slip. It is quite possible for a seizure to be sudden. Very often these accidents are not attended by any serious results. Only last May an engine seized temporarily while we were riding a machine at over thirty miles an hour, and beyond the skidding of the back wheel, nothing happened.

Does a Switch Injure a Magneto?

Does a switch injure a magneto, or is it not fitted to 1911 Triumph for fear of novices injuring engine?—R.F.A.

No, a switch is not injurious to the magneto, otherwise magneto makers would not leave a special terminal to which the switch wire might be fitted. All it does is to send the current to earth without going through the high-tension wire.

Driving from Sidecar.

Is it practicable to drive from sidecar seat? As you are aware, the driving control of most machines is on the right handle-bar. Can this be comfortably reached from sidecar seat? Would the arrangement not be steerable or comfortable if I carried about 28 lbs. (or a little more) ballast in the sidecar? What type of sidecar do you recommend—rigid or other? Are the cheap sidecars advertised really good?—A.S.G.

There is nothing to prevent the control being moved over to the left-hand side if you wish to drive the machine from the sidecar. Yes; if you carry 28 lbs. of ballast in the sidecar the ste would be better than if you dr empty. Either a rigid or castor sidecar would be best. Natura sidecar sold at £3 10s. would n so good as one sold at doubl money, but they are good value.

Castor Oil for Lubrication.

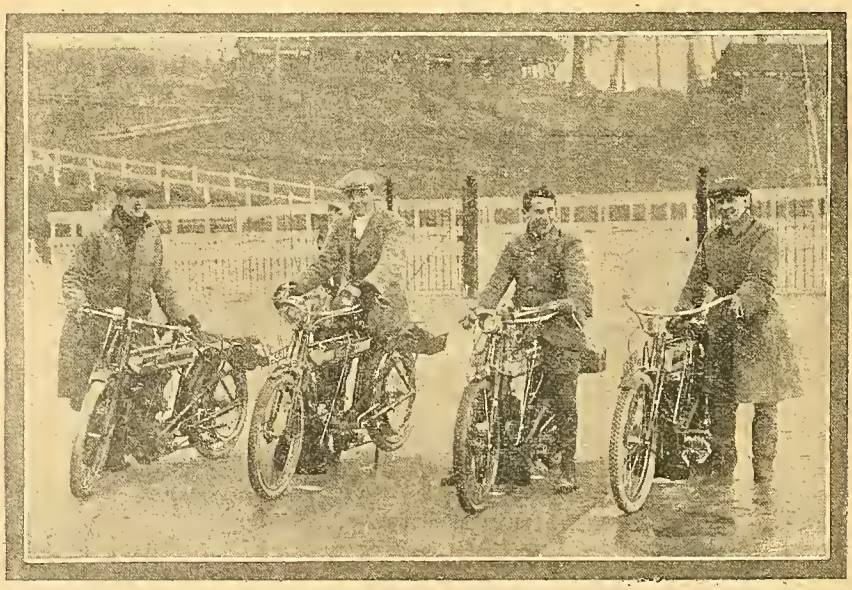
I shall be glad if yo inform me if there is serious risk in using cas to lubricate a Douglas cycle engine? I have told that it is liable to gu rings. Would this cause any d to the engine? Also does it g particles of carbon at high peratures which would be lik score the cylinders? I notice used for aeroplane engines, a far as my own experiments gone I find it gives excellent in hill-climbs.—HEDLEY PRICE.

To use pure castor oil occas would not hurt the engine frequent use would make the very sticky indeed, and cast attacks phosphor bronze, so t use would not be good for the ings. It is true that the oil ha successful on special occasio aeroplane engines, but only engines which are cleaned ever they are used.

Overheating.

My machine is a twin Phänomen wit speeds, and I have with it overheating running only a short (eight to ten miles). The c sion is perfect, and the have no play. The valves right, and the only explanat I can think of is that ther fan. I have taken this o know of no other motor cycl has a fan. The plugs are a and the machine has not see service. Would you kindly solving this difficulty?—P.J.

Is the engine timed correctly timing of the spark is liable overheating. Otherwise we c think that excessive carbon are the cause of the trouble. be a choked silencer. A coo should not be necessary for so but with a passenger att might be an advantage. T effect of new valve springs if ones have become weak.



Some Zenith-Gradua riders at Brooklands on the 11th inst. who were making use of the test hill freely. From left to right—F. W. Barnes, P. B. and J. C. Joubert de la Ferte, and W. Weatherhilt.

Sidecar Tax.

Q. Is it necessary to take out a licence for a side-carriage as well as a cycle, and should there be a number plate on the back of it?—T. E. GARRATT.

e question is one about which there s been some doubt. Our advice to you to take out an ordinary motor cycle ence at the cost of £1, *i.e.*, of urse, provided the combination of cle and side-carriage has not more an three wheels, and does not igh more than 3 cwts. unladen. n will see by the correspondence umns in our issue of Jan 26th that Auto Cycle Union is prepared fight the case on behalf of anyone the local taxation authorities en- avour to enforce payment of an extra . for a one-wheeled sidecar.

Two-speed Gear for a Heavyweight.

Q. I am going to put a 4 h.p. J.A.P. engine in a frame, and should be grateful for your advice on the following points: (1.) I am twenty tones. Should I be more satisfac- orily situated with a two-speed ear? I intend anyhow to have a ree engine. (2.) Would a 4 h.p. .A.P. take a two-speed without eing liable to overheating? (3.) Do you think the Millennium two- peed gear and free engine a really tisfactory one?—P.L.

Considering your weight we should ainly advise a two-speed gear. (2.) engine would not be likely to over- t provided, of course, all was in er. On the low gear it is possible throttle down so that the engine ains comparatively cool. You uld specify the side by side valve J.A.P. (3.) The two-speed gear tioned is excellently made, and have no hesitation in recommend- it.

Sparking at Contact Breaker.

Q. Is it correct for a spark to be seen passing between the platinum points of the contact breaker? With the dust cover removed from my mag- to (Gianoli) sometimes a spark sses regularly, and at other times es not, and I find that when it es not the spark at the points of e sparking plug is more intense. find, as a rule, that the spark at e magneto is seen only when the ring which keeps cover in position, d into which one end of the arma- re-shaft fits, is not in position. es it harm the magneto or plugs put the plug (connected up, of urse) on the top of the tank, and ith the dust cover of magneto re oved, to pedal hard and compare e sparking of the two? I may say at the plugs spark with the first rn of the pedals.—S.F.C.

far as we can remember, the con- ion to the condenser on the Gianoli neto was through the dust cover the contact breaker, consequently his cover is removed there is ex- ve sparking at the platinum ts. It is necessary to keep these ections—that is, the cover and spring holding it on—clean. It not harm the magneto at all to place the plug on the tank and to pedal the machine to test the spark- ing. All you need worry about is the spark at the plug. There should be no sparking at all at the contact breaker, so it is best to keep the cover on, otherwise the platinum points will become pitted.

Weak Explosions. Tension of Valve Springs.

Q. (1.) My engine is a new 3 h.p. Sarolea with mechanically operated valves, B. and B. 1910 carburetter, and gives splendid power, but on starting the engine the first few explosions are always very weak. Why is this? I may say that the engine will take more air than I can give it with full throttle. Is the jet too big, or the petrol level too low or high? (2.) There is a considerable blow back into the carburetter. Is this common to all engines? (3.) I was recently advised to weaken the inlet valve valve spring, as when a screwdriver is pushed up against the bottom of the valve, presumably having the same effect as weakening the spring, the engine runs considerably faster. Is this correct, or should the inlet and exhaust springs be of equal tension as they are at present?—CLERIC.

(1.) The first explosions are usually weak because the machine is not yet warmed up, besides which the correct mixture is not found immediately on starting. If the engine seems as if it will take more air it will be worth while enlarging the extra air inlet. Do not interfere with the jet until you have tried the effect of more air. (2.) This is probably due to too weak an inlet valve spring. A very slight blow back is common to all engines. (3.) There is no hard and fast rule on this point. Some engines run better with the exhaust valve spring the stronger of the two, others *vice versâ*. It depends largely on the timing of the valves and of the shape of the cams. If your engine is of the side by side m.o.v. type, pressing downwards on the valve cup would show that a stronger spring is required if an increase of speed results.

READER'S REPLY.

Cracked Exhaust Valve Seatings.

I notice in the issue of the 9th that "G.G." has a cracked exhaust valve seating. I experienced the same in my twin Antoine, and I have had it successfully repaired by the Autogenous Welding Co., Essex Place, Chiswick, W.—A. J. HICKS.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"K.McB." (Battersea Park). 3½ h.p. Lincoln Elk, especially with regard to wear and hill-climbing.

"S.H.G." (London). 5 h.p. Rex Sidette.

"Yelnats" (Cudworth). Mabon clutch on 1908 Triumph and sidecar.

"Dubious." 3 or 3½ h.p. Lincoln Elk, as regards quality and reliability.

"J.B.F." (Coventry). Two-stroke air cooled engines, also handbooks devoted solely to this type of engine.

"E.A." (Kilmacolm, N.B.) The A.C. Sociable in a hilly district.

"W.P." (Oxford). Garages in Ealing or West London where motor cycles are cleaned and stored.

"R.J.S." Nottingham). Name of composition for removing deposit.

B. Marians, of P. and M. fame, has temporarily abandoned the chain drive and two-speed gear, and was seen trying his new mount last week at Engelburg, where, by the way, his team won third prize in the Bobsleigh Race.

Change of Address.

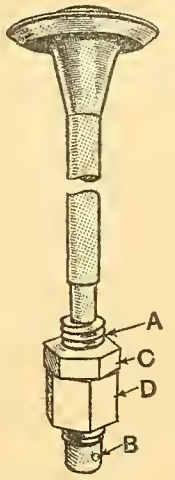
Messrs. Hunt's Stores, Ltd., dealers in all kinds of motor cycle accessories, late of Newgate Street, have moved to larger and more commodious premises at 117, Long Acre, W.C.

A Grease Remover.

"Cleaneasy" is the name of a grease-removing compound for the hands which is made by the Cleaneasy Co., Wheathampstead, Herts, and sold in convenient sized tins. It not only instantly removes grease but also stains arising from paint, rust, etc., and it is claimed that it leaves the hands perfectly clean, soft, and smooth.

A Valve Spring Tightener.

Messrs. H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W.C., have lately placed on the market a device known as "Prynne's valve spring tension adjuster." It consists merely of a threaded tube which is slipped over the bottom of the exhaust valve, and is provided with a nut and lock nut which butt against the bottom of the valve spring. The device takes the place of the ordinary valve cap, and is held in position by the existing pin or cotter.



Prynne's valve spring adjuster fitted to a Rex valve.

A. Threaded portion slipped over bottom of valve stem, held in position by collar at B. C and D. Nut and lock nut.

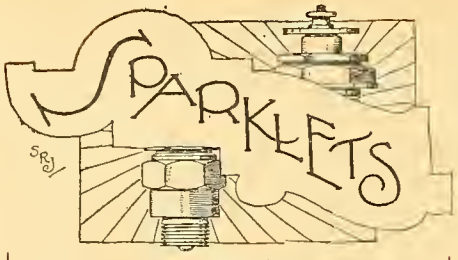
The idea of its working will be seen by the accompanying illustration, in which it is shown attached to a standard Rex valve. The model shown is only a rough one, but the device in its finished state will be made much smaller, lighter, and have a finer thread for the adjustment. The object of the device is to enable the valve spring to be tightened when it has become weak.

Clincher Sales Arrangements.

The increasing demand for Clincher tyres has necessitated the organisation of a tyre sales department which has been established at Bedford Chambers, Covent Garden, London, W.C. All communications respecting Clincher tyres should be addressed there, although the company is still retaining the West End showrooms at 1, Long Acre.

Fitall Gears in London.

London readers should note that a Lake and Elliot Fitall two-speed gear is now always on view at Mr. G. H. Smith's depot, 14a, Great Marlborough Street, Oxford Street, W., and can be seen any week-day up to 6 p.m., excepting Saturday.



A Denial.

Messrs. Maude's Motor Mart wish us emphatically to deny a rumour that their Halifax depot is about to be closed.

A Clothing Catalogue.

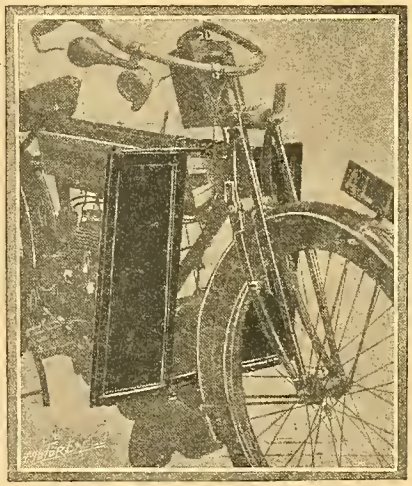
An illustrated list of motor cycle clothing has reached us from the Dunlop Rubber Co., Ltd. Those readers in want of waterproof jackets and overalls could not do better than apply for a copy to Manor Mills, Salford Street, Aston, Birmingham. The Dunlop belt and a new fastener are also listed.

Second-hand Motor Cycles.

The spring is the time of year when motor cycles change hands more than at any other, and consequently any advice which may help the novice to purchase a sound second-hand mount is especially welcome. "Motor Cycles and How to Manage Them," which may be obtained price 1s. 2d. post free from *The Motor Cycle* offices, 20, Tudor Street, E.C., has given excellent advice for the past eight years on this important question, and those in need of reliable information on this subject, and all else that appertains to the sport and pastime, should apply for a copy.

An Adjustable Mud Shield.

A further design of mud and weather shield has been sent us by E. M. Pearson and Co., 2, Listergate, Nottingham. It is found to be very effective, and differs from other designs in that it can be adjusted as to its width to suit the cooling of the engine. It is claimed that overalls are unnecessary with this shield, and that it does not slow the machine.



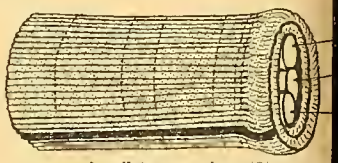
Pearson's mud and weather shield.

A Long-lived Battery.

A well-known motor cycling medi man has recently expressed himself be delighted with the longevity o Hellesen "Flight" battery, which has had in use nearly three years. was fitted on a motor cycle for th months, when it was accident dropped. It was then put to w the bells in his house, which it for two years, and is now connec to a flashlight in the owner's room.

A New Repair Outfit.

A repair outfit which has specially prepared for motor cycli use is the one illustrated below, made by the County Chemical Ltd., Bradford Street, Birmingh The roller is provided with a

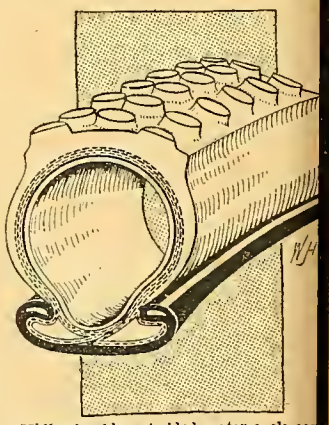


A roll tyre repair outfit.
A B & C. Receptacles for rubber solutio French chalk, and canvas.

spring which keeps it closed w rolled up. There are sepa receptacles for solution, french ch and canvas, and a compartment patches. Among its advantages compactness and freedom from ratt It also occupies less room than ordi outfits packed in tin boxes.

A New Non-skid.

"Midland" rubber-studded claim the attention of motor cyc We have received a cover for trial



Midland rubber-studded motor cycle co

poses, and propose to fit it to o our machines and report on its viour at a later stage. Midland are made in 26 × 2in. and 2¼in tions, and of light and heavy we Three rows of circular rubber stu formed on the tread. The heavy tern has a substantial thickne rubber, which should result in mileage. It may not be gen known that the Midland Rubber Ltd., Ryland Street, Birmingham market an excellent form of butt- inner tube.

THE MOTOR CYCLE

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

Open Reliability Trials.

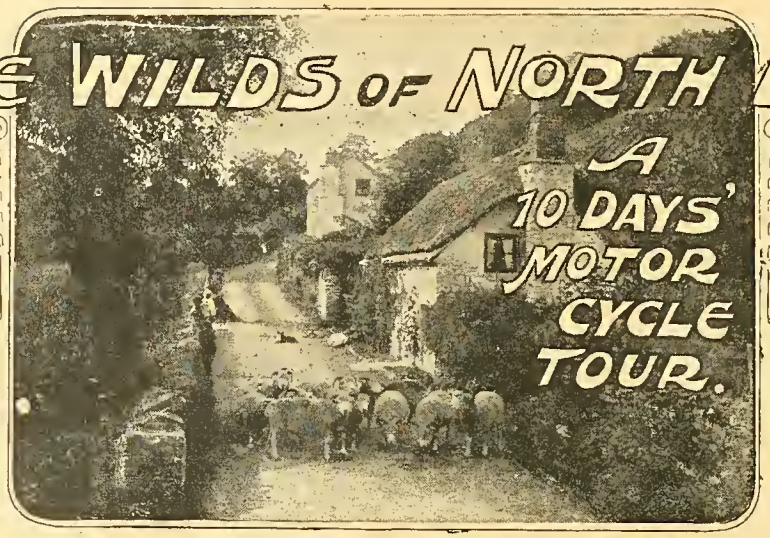
T will be remembered that early last month the Sutton Coldfield A.C. announced an open reliability trial for motor cycles, to take place on Saturday last. As it was the wish of the club to have a winter trial, the rules and regulations were ued rather hurriedly, so that the competition could e place in February. Meanwhile the committee plied to the governing body—the Auto Cycle Union for a permit to hold the event, but last week the cials were very much astonished to learn that the C.U. had not as yet sanctioned an open reliability l and did not intend to make a beginning at this ge. Here was a dilemma. The organising club l forty entries in hand, and was loth to cancel them, ecially as the response had proved so gratifying. entually a method of carrying out the trial was covered in spite of difficulties, and at the same e an escape from the impending sword of Damocles the shape of the displeasure of the A.C.U. which eatened every competitor's devoted head. The ision arrived at was the election of every entrant a n-resident member of the club, which luckily it was sible to do under its published rules, and so what ght have caused much heart-burning has been oothed over, presumably to the satisfaction of all cerned. Whilst we do not wish to be considered ty of partisanship, we cannot refrain from remarking that the attitude of the A.C.U. towards a *one day* ability trial is somewhat difficult to justify. The ition in a nutshell is this: with the rapid increase motor cycles in the Midlands, motor cyclists—both teur and professional—are anxious for an occaal open event, as it introduces a healthy stimulus competition; the A.C.U. is too busy itself to organise a trial in every district, and yet arbitrarily puts obstacles in the way of other clubs who can and will undertake these trials independently. In this connection it is not without interest to observe that quite a number of well-known manufacturers entered for Saturday's trial, even some who refrained from taking part in the January Quarterly Trial—an indication which would serve further to strengthen the view that it behoves the governing body to cater more regularly for different districts or issue permits for open reliability trials of at least one day's duration.

A National Council.

AT the annual dinner of the Coventry and Warwickshire M.C. last week, Mr. Julian Orde, secretary of the R.A.C., explained the policy of a National Council which is now in progress of formation. The council will consist of representatives of all the motoring organisations, including the Auto Cycle Union, and is to meet whenever deemed advisable to discuss important questions arising in connection with motor vehicles of all descriptions. Once the question, whatever it is, has been thoroughly threshed out in the National Council and agreed to by the various bodies, the decision or resolution will carry far more weight coming from a combination of all motorists than it would ever do from one section alone. We have in the past found fault with both the Auto Cycle Union and Motor Union for acting independently in connection with motor cycle legislation to the disadvantage of the pastime, and are therefore particularly pleased to hear that in future there will be no possibility of dissension, and that a united front will be presented either for or against any question affecting motor cyclists' interests as a whole.

IN THE WILDS OF NORTH DEVON

A 10 DAYS' MOTOR CYCLE TOUR.



A picturesque obstruction.

A PARTY of three — the writer and his wife, together with a friend—started off, early one morning last July, for the wilds of Devon. Leaving Batley, we sped along in fine style through Huddersfield, over the vile roads to Slaithwaite, and climbed the three miles of Standedge Hill at 20 m.p.h., thanks to the assistance of a following wind. By starting early we avoided the heavy traffic of Huddersfield and Manchester. Even at 7.30 a.m., our time of passing through Manchester, the traffic was well astir, and it needed a little care to dodge the heavy drays that were constantly emerging from the various yards.

Fourteen Miles of Tramlines.

However, we eventually found ourselves on the Stretford Road for Altrincham, and soon passed through this town, leaving the tramlines after traversing a stretch of about fourteen miles.

Our first stop was at a country hostelry outside Altrincham, where we breakfasted, and on consulting my odometer I found we had done exactly fifty miles in 2h. 15m.—not bad going with sidecar, passenger, and three heavy packages. After a stroll round the gardens and sampling the fruit, we were again flying along before the breeze, which helped us finely. We were doing the legal limit with ease, and the surface of the road being all we could wish, the going was delightful. Our next objective was Shrewsbury, and avoiding Chester we turned for Tarporley and on to the pretty rural village of Whitchurch. The scenery hereabouts was delightful and many stops were made to admire the views from higher points of the country. Reached Shrewsbury at 1 p.m. in nice time for lunch, basked in the sunshine for awhile outside the town, and then made a tour of the points of interest. It is a pleasing old county town, built upon a hill and washed by the Severn on three sides; the view from the English bridge is much to be admired. Replenishing our petrol tanks, we again set out, special care being needed in descending the winding hill to the bridge, and then turning sharp to the right we followed the course of the river for a few miles. The road was in fine condition, and we were careering along through richly-wooded country bathed in brilliant sunshine. Hereford, where we intended to stay the first night. The first puncture occurred opposite Dorrington Post Office—a little isolated cottage on the roadside—but on this occasion the puncture was not troublesome, and was soon mended. From here the road rises steadily to Church Stretton with several slight hills, and then a long descent of fifteen miles brought us to Ludlow, where there is a fairly steep ascent to the town, followed by a dangerous descent through the old gateway to the bridge, but after this a first-class road took us right to Wooferton and through Leominster to Hereford, which completed the first day's journey—150 miles of unalloyed enjoyment.

River Wye from Symonds Yat.

Beauties of the Wye Valley.

The next morning was spent partly in the cathedral, and partly on the banks of the beautiful River Wye. A late start was made at 11 a.m. for the valley of the Wye, and

In the Wilds of North Devon.—

much praised as this valley is, I do not consider the glowing descriptions at all exaggerated. The sides of the valley are very steep, and mostly were wooded down to the river's edge. The pretty village of Symonds Yat built upon the hillside seemed to be the tit-bit of the lot, and loth we were to leave it, but we desired to reach Bristol on the second day, although in this we were disappointed. Monmouth was the next point of interest, and after a short inspection of this historical old place we set out for Chepstow, but the lowering skies did not tend to increase our confidence in the day holding out fine, so we turned off by a country lane for a short cut to the Gloucester road, and found ourselves faced with a hill of about 1 in 5 which needed every ounce of power. Perseverance won the day, however, though my passenger had to traverse it afoot, and on one particular bit I had perforce to jump off to allow the engine to pick up. At the very moment we reached the top the clouds broke and the rain descended, causing us hurriedly to seek shelter in an old cart shed. The weather showed no sign of clearing, so we asked for refreshment at one of the cottages near by, and were accommodated in a most kindly manner. After four hours' confinement in this little cot the rain still descended, so, donning overalls and macintosh coats, we set out for Gloucester, some twenty odd miles distant. The road lay through the Forest of Dean, the most extensive wood I have ever seen, and it was a great pity that the elements prevented us from fully enjoying the beauty of the surroundings. Our clothes sodden with rain, we eventually arrived at Gloucester, and decided to spend the night there.

Lynmouth. Manor House and Countisbury Hill.

Next morning broke very dull indeed, and we feared more rain was coming, but after mid-day the sky cleared finely and the sun shone for the remainder of the day. The magnificent undulating road to Bristol has a fine surface, and as we rode along I noticed that different road materials were being tested, each section being shown by a board fixed at the roadside giving the date of making and the nature of material. Evidently in the West they are trying to solve the dust problem.

Busy Bristol.

Bristol, the largest town in the West of England, troubled us not a little, and a good deal of time was spent in getting through its busy streets. We tarried while inspecting the extensive docks and admiring the famous suspension bridge which connects the suburb of Clifton with the opposite side of the river. Crossing the dock bridge we took the lower road for Weston-super-Mare, and again branching off at Congresbury made for Highbridge and on towards Bridgwater.

The scenery hereabouts was prettier and the country getting more hilly, and some exceedingly fine views were obtained from the higher ground. After tea at Bridgwater we went on to Minehead, the first place of any importance on the coast, and found it most pleasantly situated with lovely views, and a choice of accommodation is offered that few resorts can equal. One can either stay at sea level, or a little above, or again well up on a sharp hill. Choosing the sea level, we found comfortable apartments, and spent the evening listening to the local pierrots on the promenade.

The Lynn Country a Devonian Switzerland.

Next day opened out fine and bright, and our objective not being far distant, albeit requiring some heavy work, we made rather a late start, somewhat loth to leave the cliffs of Minehead. Our route was through some delightful scenery, and at Headon Cross we stayed awhile to enjoy the beautiful view obtained both up and down the valley. Another four miles and we arrived at Porlock, and dismounted to take a look at the famous Porlock Hill before attempting its ascent. This hill, which boasts of a gradient of 1 in 5 and 1 in 4½, quite puts my county test hill—Sutton Bank—into second place. Porlock at its west end is about 120ft. above sea level, and in the first mile a climb of 680ft. is encountered, and at Whetstone an altitude of 1,217ft. is reached.

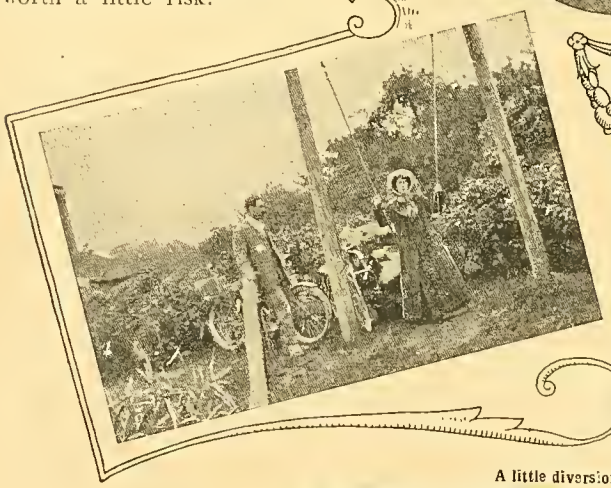
An Exciting Ride.

Realising that no 3½ h.p. motor on earth could take a sidecar with passenger up this climb, I availed myself of a private road which winds up through a private estate, for which a charge of 6d. is made, and a more exciting ride I have never experienced. The road is made through a wood, and on the outside edge falls down a sheer precipice the whole way; the least mistake in steering or engine manipulation, and over the edge the lot would go with its occupants to certain death. Before setting out on this particular tour I sought the advice of the Motor Union, which advised me not to essay the task of taking a sidecar from Minehead to Lynmouth, but I have risked the ride, and

In the Wilds of North Devon.—

whilst the surface and gradients cannot possibly be worse, there is reward at every point in the magnificent scenery. Arriving at the summit, we are on the edge of the uplands of Exmoor which extend westward as far as Countisbury. We are still high up on the purple moss when the Devon boundary is reached, and from here opens out a lovely view of Glenthorne—a charming spot on the shore.

Amongst the combes and the hills are many glimpses of the turbulent Lyn. The descent of Countisbury Hill needed every ounce of effort on both brakes, and now and then the additional brake of engine compression, along with passenger dismounted, to keep the machine in hand, and as we reached the bottom the stage coach, which traverses this stretch daily, was starting out for Minehead, and it required all the strength of the six horses to draw it up empty. This Countisbury Hill is given in Gall and Inglis's Contour Book as the most dangerous in the country, but the views of the rocky Devon coast obtained therefrom are worth a little risk.



A little diversion at Watersmeet, Lynmouth.

A stop for lunch at Cleeve, near Bristol.

A halt on Exmoor. Snapped at the top of Porlock Hill.

Lynmouth and Lynton.

"Lynton's lone village peering o'er the deep,
Where no stern glance or noisy throng intrudes
To mar the sacred magic of the scene."

Lynmouth to me is Bettws-y-Coed, Bedgellert, and Land's End all rolled into one, combining mountain scenery, river scenery, and seascape all blended into one glorious picture. The village occupies the bottom of a narrow valley overhung by precipitous heights; the East and West Lyns unite their crystal waters a couple of hundred yards from the shore, and enter the sea, even at low water, without any of the unsightly appearances commonly exhibited at such places when the tide is out. The shore consists of rocks and boulders, and as yet this rural retreat is unspoiled to any extent by the company promoter and the conventionalities of the seaside resort. One day we, in a moment of weakness, decided to explore Exmoor in native fashion—that is, astride an Exmoor pony. In this canter we saw many spots only accessible on ponies or on foot, and in the course of the day visited the "Valley of Rocks," one of the wonders of Devon of which Southey speaks with enthusiasm, saying that it made him feel for the first time the "sublimity of solitude." The pile of stones known as the "Devil's Cheesewring" marks the whereabouts of the abode of Mother Weldrum, mentioned in the seventh chapter of "Lorna Doone" as having been visited by John Ridd, the hero of the entrancing romance of Lorna Doone.

Watersmeet.

Here the waters of the East Lyn meet the water of the Combe Park, and the spot is described as the "prettiest green spot on earth." Nor does it belie its title. Leaving by the Watersmeet Road down to the river path the rock strewn slopes on each side golden with furze, we were compensated for the heavy rain which had driven us indoors the previous night by seeing a large volume of water coming down the valley and the river, therefore, under the very best circumstances. Not a dozen yards of the walk up that valley is without its waterfall or deep pool. Never shall I forget that picturesque ravine to the junction of the waters, which in its upper reaches is almost Alpine in its character.

Exmoor, the Home of the Wild Red Deer.

Our day of departure broke dull and gloomy, and the low-hanging clouds threatened rain, but the wind had luckily veered round to the west and gave us useful help up the 1,600 feet we had to climb. Reference to wind assistance may surprise some readers, who think that a motor cyclist can afford to ignore rude Boreas, and so he can to a great extent when solus, but with a sidecar which presents a very wide frontage to the air, the wind resistance is a matter of moment. My friend on his Triumph easily scored, but the two-speed P. and M. with its sidecar and extra passenger stuck manfully to its heavy task.

This article, by Mr. Horace H. Mann, will be concluded in our next issue.—Ed.

LEADING MOTOR CYCLE CLUBS

S. Johnson, president.

W. Musgrave, hon. secretary.

No. 7.—BRADFORD MOTOR CYCLE CLUB.

THIS club was founded during the autumn of 1906 by about a dozen local motor cyclists, one or two of whom are still acting officials the club. From the date of its incep- the club has never looked back, the mbership having steadily increased n year to year until it has reached its sent magnitude of 120 members. Since formation the Bradford Club has ays been a staunch supporter of the .U. Competitions were first organised the spring of 1907, and the original gramme has been gradually enlarged year by year, and the following complete selection of events now comprises the competitions organised during a single season. The Bradford-Keswick and back 200 mile twelve-hour run, closed to members, constitutes a trip into beautiful Lakeland, whilst the two 24 - hour runs, viz., Brad--London and back and Bradford-nburgh and back, are trials of a arduous nature. One or both of e latter are run as open events, and club is one of the few which pro- s special classes for passenger vehicles also for teams of three solo riders.

Felix Scriven, a former trials hon. sec.

ncouragement for the Novice.

ne of the features of most of these s is the encouragement of the novice by suitably handicapping the more rienced and better mounted expo- s of the sport, and so equalising ers both in reliability and hill- bing tests.

mpetitions, for which trophies are apart, are run specially for novices, ious reliability trial gold medallists g debarred from entering. Also in long distance trials, such as the lford-Edinburgh and back and the lford-London and back, novices are n a predetermined number of points over those who have previously gold medals in reliability trials. her point which might be empha- is the adoption of sealed courses in of the reliability trials.

ssenger trials are specially organised the development and encouragement passenger-carrying vehicles, and the course selected in the past year for this trial was one likely to bring about improvements in the design of any vehicle on the road.

Reliability trials are run for teams of three riders, the team to include not more than one gold medallist.

The club has been very fortunate in being able to render the checking of the long-distance trials more efficient by the hearty assistance of various clubs situated on the more distant parts of the route traversed.

This club claims to have been the first to organise an open climb specially for the amateur on a standard machine, and, in fact, to have appointed a committee of scrutineers to examine and classify, if need be, the machines entered. It is intended to organise annually an open hill climb on these lines, and the executive is not discouraged by the fact that the value of its efforts in the last open climb was seriously diminished by the unfortunate errors of the timekeepers engaged by the club, by which a re-run of the event was necessitated in conjunction with the A.C.U.'s open event at Sutton Bank at the latter end of September.

Members in Competitions.

The club prides itself on having many prominent motor cyclists amongst its members. Messrs. T. G. Bullus, C. Sydney, and F. Scriven are consistent performers in reliability trials, and generally succeed in gaining the best schedules in competitions, whilst the latter, when his official duties permit may often be seen in the saddle doing well at hill climbs. Again, Messrs. Harry D. Shaw and Jack Scriven are well known for their proficiency in hill climbs and speed events, the former holding the record for Sutton Bank and the latter having put up a very good performance in the T.T. Race in company with Messrs. Eric S. Myers and F. Philipp, two well-known exponents of the locally-built "Scott" machine.

H. D. Shaw, trials hon. sec., and a successful competition rider.

The success of the club is due in a great measure to the hard-working officials, and in particular to the excellent services of Messrs. S. Johnson and W. Musgrave, respectively president and hon. secretary.

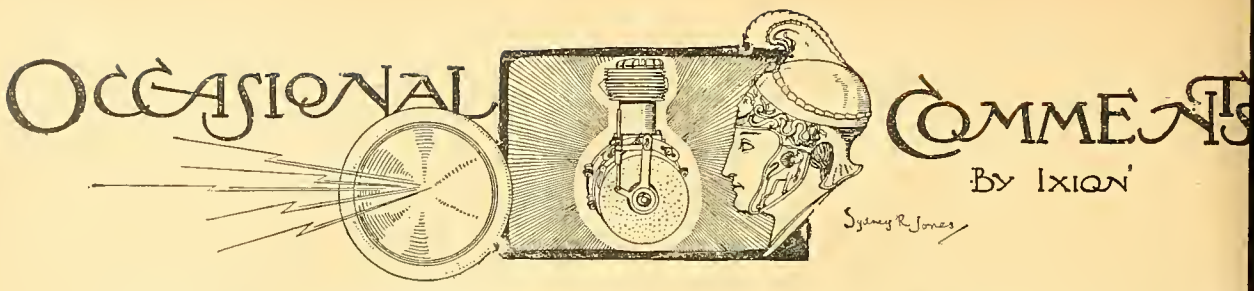
The latest step the club has taken as a means of bringing together its numerous members is the establishment of the newly - opened club premises, which are conveniently situated in the centre of the city, and have proved an unprecedented success, some of the members proving adepts at billiards in the less strenuous periods of the motor cyclists' year.

T. G. Bullus, hon. treas.

The leading club officials are: Mr. S. Johnson (president), who is occasionally to be seen in competitions, but, fortunately for the club, devotes most of his time to originating ideas for the running and management of competitions; Mr. W. Musgrave (hon. secretary), whose services in that capacity are indispensable; Mr. T. G. Bullus (hon. treasurer), a keen competitor, who, when at liberty, makes an art of checking; Mr. H. D. Shaw (trials hon. secretary), who spends all (?) fees as fast as they come in, and succeeded Mr. F. Scriven, who did much hard work as trials secretary, but had to retire owing to business.

M.C.C. LAND'S END TRIAL.

At the last committee meeting of the M.C.C. the rules for the London to Land's End and back competition for the Jarrott Cup were discussed. It was decided to include sidecars, and Messrs. Gwynne and Seed kindly offered to present a cup for the best performance by the driver of a sidecar. Owing to the roughness of the roads from Penzance to Land's End it was decided to take the times on the outward journey at Penzance. The start will be from Kew Bridge at 3.30 a.m., April 15th.



Artistic Outline in Mudshields.

I think the designer of the wind shield illustrated on page 161 in our issue of February 16th can claim one advantage at least over many of his competitors, and that is he has not sacrificed beauty of outline. His shield has the artistic contours of a high-class torpedo car body, and should therefore enjoy a special popularity.

The days are near at hand when makers will consider listing such shields as standard options in their regular catalogues, and by a study of graceful aspects, and the use of less heavy colourings than black, we should finally attain really weatherproof machines which are not disfigured by their efficient mudguards. More power to Mr. Green's elbow.

Loss of Power with Lightweights.

That there are two sides to every question was significantly illustrated by two letters on p. 189 last week criticising my statements on the above question; the first letter denounced me, the second applauded me.

I specially excepted certain of the best lightweights from this defect, but it is obvious that any engine which is only just equal to its load when its maximum efficiency is available "feels" a loss of power more seriously than a larger engine which has about 2 h.p. in reserve so long as it is kept in tune.

For this reason the vital factor in the selection of a lightweight machine is to spot all probable leakages of power. For this reason I am very strongly of the opinion that a genuine 80 lbs. lightweight should content itself with a single-cylinder, because the delicate parts can be more sturdily constructed in single than in duplicate. Of course, a miniature twin, developing 2 h.p. or so at full revolutions, is a perfect dream when it is running "just so"; but it is a stiff problem for the designer to evolve an engine of this kind which is both substantial and accessible. When we reach a weight limit of 110-120 lbs. the desiderata can be secured without confining oneself to a single cylinder.

Colonial Needs.

I have just received a budget of correspondence from over the seas relating to my notes of December 1st last, and it shows that *The Motor Cycle* is read and the motor cycle employed in some very queer places. I fancied I knew a little geography, but without the aid of the postage stamps I must admit I should have had no idea from which hemisphere many of the letters came—the addresses are quaint and unpronounceable to a degree.

The sole point of unanimity in this hetereogeneous budget is the vituperation hurled at our spring forks. All my foreign correspondents agree that they are entirely inadequate to the rough roads of "new" countries. It is asserted with one voice that th average colonial repair shop is stacked with brok forks and girders, and that the bouncing of these for during their short life is aggravating to a degre Evidently shipping models require stronger tubing the forks, and stronger springs than are fitted f home use.

As regards transmission there is no certain voic Personal fads and varying local conditions evident affect the verdict, and probably a good sample of a transmission will win adherents, just as is the case home.

One letter from Australia is interesting. The writ described a type of belt which is entirely unknow here, and is a combination of our two leading line being known as "rubberised leather." It is construct of hide, the surfaces of which are impregnated wi rubber, so as to combine the toughness of leather wi the clean surface and non-slipping advantages rubber. The rider in question claims that these be are regularly in use for 3,000 to 4,000 miles befo being worn out.

Infinitely Variable Gears Barred.

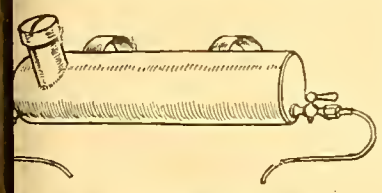
Some preliminary hill-climbing regulations make abundantly evident that the barring of infinite variable gears, which was a feature of the tail end last year's competitions, will be continued during t present year.

My personal opinion is that, if the riders in a locality shrink from taking a whopping at the han of the expanding pulley brigade, they are possib justified in barring these hill-speed champions fro their local sprint events. But I must take stro exception to the method by which certain clu approach their cunning plan of elimination.

It is one thing to say "The X—— machines a barred from this class!" The maker of the X— machine gets a more certain advertisement from t exclusion than he would from competing, and l grievance is balanced on the commercial if not on t sporting side. But it is surely playing the game rath low to frame a lengthy and verbose paragraph of co ditions relating to two-speeded and three-speed machines, the nett effect of which is to debar t infinitely variable gear.

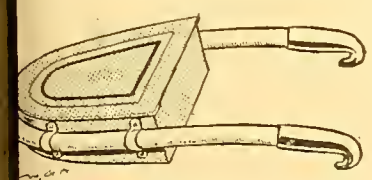
If the promoters are afraid that the presence the X—— machines will reduce their entry by frighte ing away other trade entries, let them say so, and the matter take its course. Such procedure is fra and outspoken. But to wrap up a somewhat coward proviso in a mist of timid verbosity is scarcely spor manship. Sportsmen must regret that all our hi climbs are not run on the old and characteristica English "let-'em-all-come-and-Old-Nick-take-the-hin most" principle.

e of the earliest members of the r cycle industry was Mr. A. C. son, 163, Arlington Road, Camden , N.W., and when we first re- ber him he was constructing his motor bicycle. Ever since those he has devoted his attention solely e manufacture of adjuncts and acces-



Paraffin tube for twin-cylinder machines.

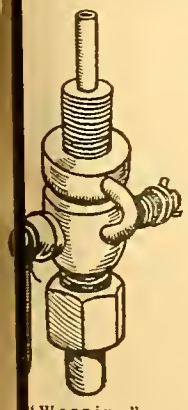
s which add to the rider's conveni- and to the efficiency of the machine. various articles illustrated are a that Mr. Davison keeps thoroughly -date. A careful rider knows that far better to inject paraffin into the der than petrol, as the former is



Davison's handle-bar box.

lly efficient in freeing the piston s, and is not such a powerful dis- nt of oil. Mr. Davison has, in con- ence, introduced a special paraffin with two outlets purposely designed twin-cylinder machines. The outlet pipes are of copper, and they may be bent to come into contact with both compression taps. The container is designed to clip on to the lower horizontal tube of the machine.

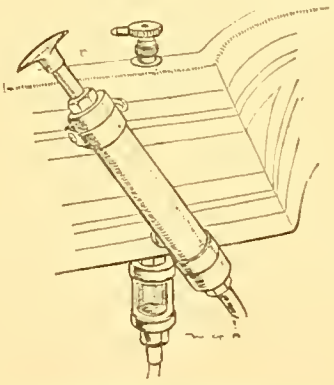
Another useful fitting, which will not perish like leather, is a handle-bar box, constructed of metal, designed to fit the curve of the bars, whilst still another adjunct is the Davison "warning" tap. It is not exactly a novelty, but it is an exceedingly useful device, preventing the petrol from being completely used up without warning. As soon as the level of the upper pipe is reached the engine begins to show signs of failing, and the tap may be turned to another position to allow the last drop in the petrol tank to be used.



"Warning" petrol tap.

Yet another useful device is the outlet strainer, which screws into the same collar as the usual petrol tap, and the tap in turn will screw into the lower portion of the strainer.

The illustration of the tapless oil pump and gravity drip feed lubricator

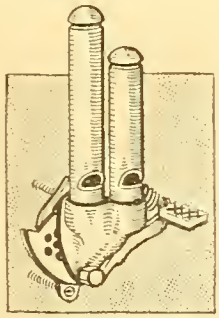


Davison's drip feed gravity lubricator and auxiliary tapless pump.

shows the front part of a special tank which Mr. Davison has lately brought out for a No. 9 Chater-Lea frame. The lubrication is, of course, mainly effected through the drip-feed lubricator, but the pump is added as a standby. Mr. Davison expresses it as his opinion that the gravity lubricator is more reliable than the suction type.

A Two-note Exhaust Whistle.

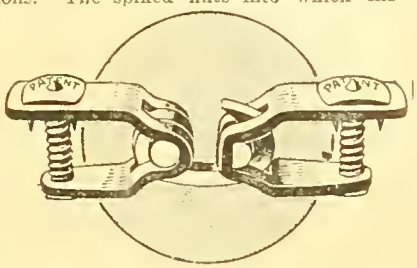
Brown Bros., Ltd., Newman Street, Oxford Street, W., have just introduced a double note exhaust whistle for motor cycles, which may be easily fitted to the silencer end of most motor cycles. As will be seen by the illustration, it is operated by the foot. Owing to the double note the warning given is musical as well as penetrating, and compels attention.



The Brown two-note whistle.

Another Detachable Fastener.

A simple type of fastener is now being sold by the Dunlop Rubber Co., Ltd., Aston, Birmingham. It is of the hook type, and is of substantial proportions. The spiked nuts into which the



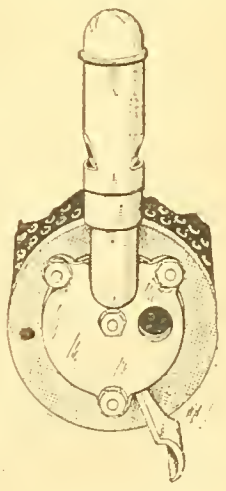
Dunlop hook fastener.

holding screws fit assist in equalising the strain on the end of the belt. This type of fastener is readily detachable, but there are no small parts to get lost.

A First-aid Case.

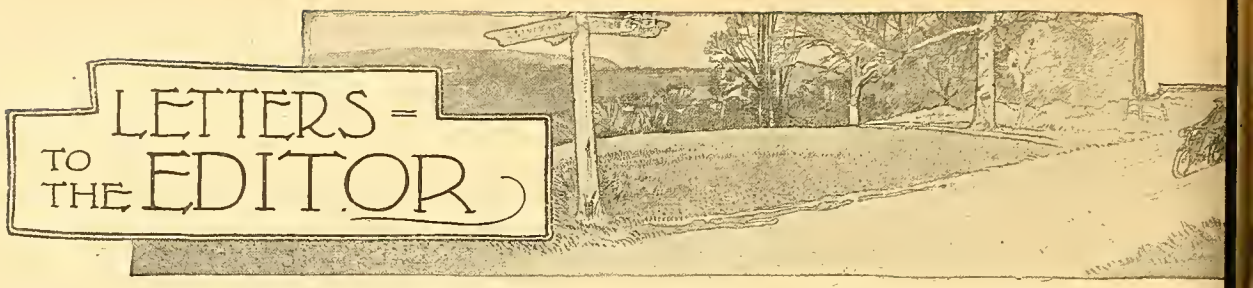
A perfectly flat metal case, occupying no more room than the ordinary cigar case, can now be obtained from Burroughs, Wellcome and Co., containing all the requisites for first aid treatment. It is known as the Tabloid First Aid No. 710, and is just the thing for motor cyclists.

A combined silencer, exhaust whistle and cut-out has just been placed on the market by Mr. G. Aldington, 337, Haydon's Park Road, Wimbledon, S.W. Mr. Aldington informs us that several motor cyclists have consulted him regarding the fitting of exhaust whistles to their present silencers, and having found some difficulty in accommodating standard types of existing silencers, he has introduced the article which we illustrate.



Adlington's combined silencer and exhaust whistle.

Messrs. A. W. Gamage, Ltd., have joined the committee of the "All-British Shopping Week" to be held this month, and will make a special show of all-British motor accessories. Prominent amongst these will be the Simms magneto.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and addres

Motor Cycle Taxation.

[5416.]—I quite agree with your leaderette regarding motor cycle taxation, but I think motor cyclists take things much too quietly, and do not agitate enough. I feel sure that many more would take up the pastime if the tax were not so heavy.

Wishing your paper every success in 1911, C.D.

Motor Cycling in Canada.

[5417.]—As a constant reader of your valuable paper, I wish to say for the benefit of others that, although machines are ridden here with the thermometer as much as 40°F. below zero, oil or gasolene gives no trouble whatever.

I have never seen enough cold to freeze gasolene, or prevent proper vaporation of same, if the machine were not left standing outside over half an hour. This applies to all good motor cycles. CHEER UP.

Winnipeg.

Puncture Sealing Compounds.

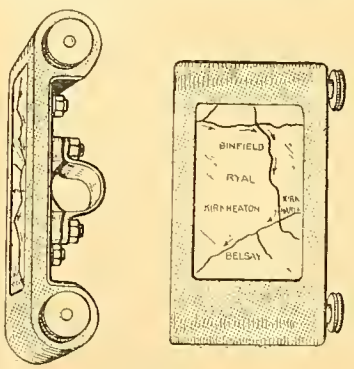
[5418.]—Referring to the correspondence in recent issues under the above heading, Messrs. Firmax, Ltd., and Mr. T. D. Murray will be glad to hear that my experience in connection with a butt-ended tube is quite different from that indicated in their letters..

The *modus operandi* is quite simple. After pumping in the preparation and inflating the air tube, the wheel should be gently revolved to and fro, and the Firmax will readily find its way into all the crevices that there may be, and tyre troubles are no more. H. ELITHORN.

A Neat Weather-proof Map Holder.

[5419.]—The following is the description of a weather-proof route map holder I have made, which may interest your readers:

The casing, which is of sheet brass, is 6½in. long by 3⅝in. broad, and is made in two parts, the lower being clipped to a crossbar between the handle-bars of the machine, and the upper part, which contains the maps, is made easily detachable from the lower part.



The maps as required are rolled on to a spool at one end and stretched across the face of the casing to a spool at the other end, and the maps can be reeled off as required in either direction.

The strip maps, which I have of necessity to make myself, are traced off a suitably scaled map on to tracing paper, and as 10ft. of map can be rolled on to the spools, I can get a continuous length of map equal to about 500 miles of route, which is a great boon when touring.

I also place arrows at intervals along the map, pointing north, so that I can tell how the land lies, and also mark off all known police traps and speed limited areas, which can be seen at a glance. X 1789.

Trouble Caused by Damp Fibre.

[5420.]—I had this trouble recently, my machine ref to start one morning. I soon located the trouble, being in a hurry, got out my spare contact breaker, to find it in the same condition. Is this a new which has cropped up, as I have never experience with any other machine, and have not found it mention "Hints and Tips"? Your paragraph mentioned the ren but no way of avoiding the difficulty, as an all-we machine ought to be damp-proof. POTTERE

[There is no other way of avoiding the trouble tha storing the machine in a dry place. See "Ixio comments last week.—ED.]

A Dastardly Action.

[5421.]—The unfortunate incident experienced by M H. Tessier in the last End-to-end Trials will no doubt be fresh in the minds of your readers. I should like to further attention to a similar case just reported to me.

A gentleman in this town (Sheffield) recently had his m cycle engine completely overhauled and rebushed by the whose works I am in charge of, after which, to use customer's words, the machine ran better than ever be and was running perfectly up to Saturday night, the 4th The following day, Sunday, the owner of the machi question was out for a spin with several friends, when, out warning, and in spite of oiling, the engine became clanked, and finally pulled up abruptly. The machine returned to my firm's works for examination, upon whi was soon noticed that something unusual had taken p and on opening the crank case a quantity of flinty m was found in the oil, which, on being carefully separated washed and dried, proved to be sharp sand and grit—ab small cupful. Even the timing gear was partially clo

One can only assume that some evil-disposed person, dently much in need of a more lucrative occupation, had very busy indeed, and as a result of his handiwork, s this catch his eye, it might interest him to hear tha engine is as badly damaged as my firm's reputation w have been had it been under different circumstances.

Fortunately, such occurrences are uncommon, or othe it would be unsafe to leave a machine for any length of unattended. The machine in question was a twin Rex. C. WIGHTMA

Twin-cylinder Sociables.

[5422.]—As I have been thinking of getting on the A.C. sociables, I read with much interest the letter "Ilikum" in *The Motor Cycle* of February 9th, and following Saturday I got a friend of mine to take m my first ride in his A.C.

We started from my office in London with tramlines grease galore, and I was surprised at the way the little went through it all at a splendid pace, and the flexi was wonderful, but what will interest "Ilikum" and others, I expect, will be to hear that we raced up Hind on top speed, my friend and I weighing together twenty-four stones, and we never changed down for an all the way from London.

Why ever some people want to carry double weight so much extra power I don't know. The extra cost of p to drive a two-cylinder machine is surely a considerati most of us, besides double expenses in many other way

I may say that after one ride, I have decided to buy an sociable, and hope to have it shortly. A BUILDE

[5423.]—Seeing correspondence respecting the A.C. passenger machines in your columns, I would like to know the opinions of your readers respecting the oil for the engine. The makers advise oil for air-cooled engines. A friend of mine strongly recommends me to use water-cooled, such as Price's Motorine C. If anyone has used the latter I would be much obliged for any experiences. My friend tells me that by using water-cooled oil the engine runs better, starts easier, and soots up much less than with air-cooled oil. Is this so?

LB 1088.

[5424.]—I am much obliged to Mr. Atkings for his reply to my letter with reference to the A.C., but he does not say anything about the speed with two up up Westerham and Titsey, as he drove in the Quarterly Trials. I should be glad if he would tell me what the combined weight of himself and passenger was, and also what was the maximum speed of the A.C. up the two hills referred to. I am afraid from what I have seen that with the present power this machine is slow up hills, and I am sure that no one requires the climbing of any hill to be drawn out with one foot on the low speed pedal all the time; this is a very tedious process, and the tension for a short distance very quickly makes itself felt.

I for one want to get over the climbing of hills as quickly as possible, and if a twin engine of about 8 h.p. were fitted, those who wanted to potter up could do so, and those, like myself, who like to get over the ground as quickly as possible would have the necessary power to do it with.

In spite of what your other correspondent says, I maintain that a twin-cylinder engine would give a more flexible drive—at present, judging from what I have seen, very necessary; if it is now easy to accelerate it would be better still with the twin engine.

ILIKUM.

How to Avoid Tyre and Rear Wheel Troubles.

[5425.]—I enclose you a photograph of my machine and sidecar, which I have just had taken, showing the specially built back wheel to my 5 h.p. V.S. I found that the spokes of the standard 1910 model were not strong enough to stand the strain of the gear, so the makers built me a very heavy spoked wheel. I had a voiturette cover and inner tube, with

A V.S. and sidecar fitted with a specially strong driving wheel referred to in accompanying letter.

extra tread fixed on the new cover. With these precautions I have not had the least trouble with punctures or otherwise. Riders of sidecars with gears in the back hub would give the above their consideration.

I was very unfortunate in the Quarterlies with a choked carburetter right at the start, and lost so much time by not tuning it properly at first that I had no chance of catching up the other competitors.

W. O. OLDMAN.

The Motor Cycle Steamer.

[5426.]—I have pleasure in penning my first letter of comment to you after reading your valuable paper for years. I think other readers will agree with me that "An Old Engineer" should be given every encouragement, and not discouraged, as the writer of letter 5378 does. He even admits that steam cars possessed the little advantage of lightness, ease of control, flexibility, and even lightness on tyres.

Let the up-to-date motorist dwell on the latter item alone, to say nothing of the former, and a smile will flicker across his face.

I, an old motorist, should delight to see "An Old Engineer" bring out a steam motor bicycle. Then we should see something in the way of all all-round change, which is good for everybody—sometimes.

Wishing your interesting paper every success and "An Old Engineer" the same,

S.W.W.

[5427.]—I am very glad to see a revival of interest in the motor cycle steamer, and I hope we shall hear some more opinions on the subject. A steam single tracker has already been described in *The Motor Cycle*, and in spite of very crude construction and design it apparently goes. I think the design published in the issue of February 10th is open to criticism in many points.

1. The petrol tank is so situated that any petrol spilt is bound to fall on the generator.
2. The water tank would be better placed underneath the footboards.
3. The condenser should be in front of the steering head.
4. Chain drive is undesirable, the engine can be placed to one side and drive a shaft direct.

To compete with the petrol bicycle the steamer would have to use paraffin, of course, and it is worth while to note that the following cars use paraffin: Turner, Rutherford, Pearson-Cox, Morris, White (paraffin or petrol), Clarkson (steam 'bus), and Sheppee.

The difficulty of stoppages has been over-rated. When once the boiler is hot there is no more difficulty in lighting the burner than lighting a candle, even after a two hours' wait.

Referring to letter 5378, even if the thermal efficiency of the steamer were half that of the internal combustion engine, the fact that it uses fuel at less than half the price of petrol brings it into the running again; also in many parts of the world petrol is practically unobtainable.

The conditions under which a marine engine runs are entirely different, as it nearly always runs full speed in one direction—the defects of the I.C.E. are not so obvious.

Steam car owners certainly are enthusiastic—that is because they have got a good thing, and they know it. It is ridiculous to say that steam car mechanism is complicated. The automatic burners are only complicated to those who cannot take the trouble to understand them.

"JR 51" is apparently unaware that the Stanley exhausts straight into the atmosphere, but as the steam is superheated it is practically invisible, and I have never heard of an owner being prosecuted.

H. E. RENDALL.

[5428.]—It is with the greatest pleasure and interest that I read the article entitled "The Motor Cycle Steamer," by "W.G.A." Hitherto we have seldom been offered a sensible summary of the difference between steam and the internal combustion engine for cycle or car work.

I for one hope "W.G.A." will give us careful details of the generating plant he would propose to build under the common circumstances he alludes to in his article.

There is one ever present annoyance in steam outfits that is seldom touched upon. I refer to the disposal of the lubricating oil after it has served its purpose in the cylinders.

This trouble alone has deterred many from indulging in the luxury of steam. I myself have seen as much as two gallons of oil taken from the water tank of a modern steam car after two or three days' work.

If "W.G.A." would embody a steam turbine in his design for a cycle steamer the difficulty might be overcome. Failing this, however, the little steamer is bound to be messy, if no worse.

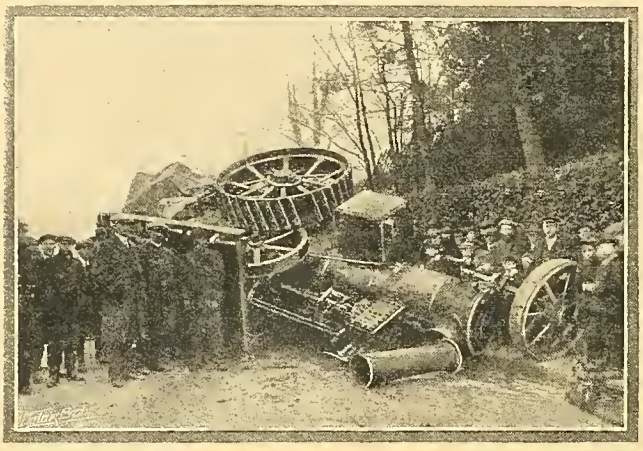
I trust we may soon hear more from your contributor.

THOS. F. HUNT.

Something Like a Smash.

[5429.]—I enclose a photograph of an accident which occurred here (Guildford) a few days ago, one man being killed

It appears that the driver was changing gear, and the gear pin slipped out, and so the engine ran down hill "free." Being a fairly long hill the driver turned the engine (which had a lumber waggon with heavy iron wheels, a furniture



An effective smash up at Guildford.

van, and a heavy covered van behind it) into what he thought was a banking, but which proved to be a high kerb and stone wall. This happened at 11.30 at night, and shows one of the dangers of the present system of allowing a huge thing like this with three vans behind it on the high road, and yet they grumble at poor little motor cycles!

EDWARD COX.

Colonial Requirements.

[5430.]—I notice that in several recent numbers of *The Motor Cycle* you and your readers are discussing the ideal machine for the colonies.

The writer is perhaps as well qualified as anyone to judge, as he has been a keen motor cyclist for the last nine years, and during that time has owned and ridden nine different cycles a distance of about 70,000 miles in this district.

At present two machines are in use, a 5 h.p. Indian and a two-speed Humber. The former is a little beauty, and the only fault I have to find with it is the want of a low gear for getting through heavy sand, and climbing hills which cannot be climbed at more than eight or ten miles an hour owing to bad surface.

The Humber is quite a success, and the gear fulfils a long-felt want, but it is rather noisy for town work.

If Mr. Wells is amenable I hope when I reach home next June to induce him to let me have a 5 h.p. Indian with a foot-controlled two-speed gear, and if in addition he will also fit a voiturette back wheel I shall return happy to Rhodesia.

Beyond this I don't think any special modifications are necessary for the colonies; certainly high clearance is to be avoided, as this elevates the centre of gravity and destroys the balance in sand or on grease. A man who hits a stump or a rock is a bad driver, and has only himself to blame. He should steer better.

In conclusion, I can strongly recommend those of my brother medicos in the colonies, if they have not already done so, to use motor bicycles for their work; they won't go wrong if they order a machine of good repute. The writer has also found it to be most economical to sell the old machine at the end of the year and buy a new one.

One point. Machines for the tropics should be painted white or cream. My Indian is green, and the other day I had left it standing in the sun at a place a few miles from home, and I found about two pints of petrol had boiled away. Dark-coloured paint attracts heat, and is often too hot to bear the hand on. My De Dion car, which is cream-coloured, is never hot, and the paint does not blister. I have ordered the paint for my new Napier to be white. Paradoxical as it may seem, these colours always look clea out here, even when you come in from a long and dus run. F. E. APPLEYARD, M.B. Cantab.

Salisbury, Rhodesia.

Confusion of Names and Initials. A grumble.

[5431.]—After thirty years' pedalling many of us ha taken to the motor cycle, and so to the purchase now a again of a fresh mount. As a preliminary to purchase a to clear our minds from a confusion of names and deta we seek your paper. Confusion arises at once with t bookstall boy, who insists on having the paper called different names on different days. He denies that it is chameleon, and then adds a lot of other names—these l for me. Still, I get the paper, and I like it.

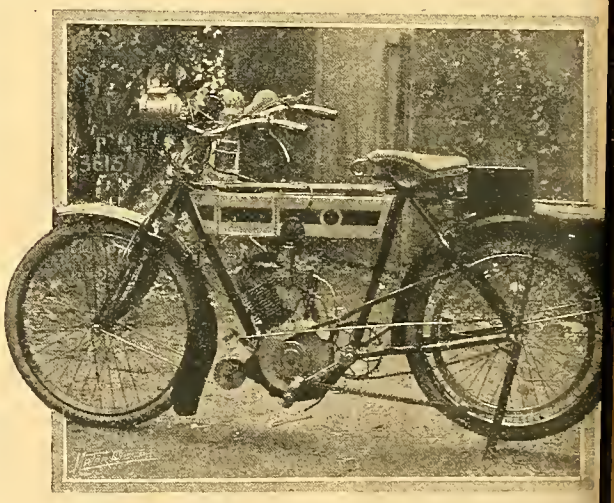
And now to the advertisements. Did I say confusio Yea! worse confounded. When last I wanted a new machi there were the names of certain makers which stood out pioneers, and mostly so stand to-day. Only a few of th names had been abbreviated, first by their admirers a subsequently by the firms themselves: we recognised "C.A.T.," the "D.O.G.," and the "C.O.C." These abb viations or diminutives were, in fact, a compliment to eminence or notoriety of the particular firm. Other fir equally worthy, resisted these affectionate sobriquets. stand to their full trade title or good surname.

One result of this complimentary initialling has been induce new firms to assume, of their own accord, init instead of names, with the result that the public is as to remember a machine as the "P.N.," the "S.N.U.," "Y.M.C.," the "A.A.," the "A.B.," the "B.A.," or "R.O.T.," etc. As one of those who keep a motor bic merely to ride it, I say that we do not remember th initials—we pass them by.

So we come back to the advertisement which mention name we know: we know it, perhaps, on the road, perh in your paper by reports of wearisome trials, perhaps me by its advertisement of a plain specification and price—point is that it is a name we know and not a jumble initials as hard to memorise as the plate number of a away car. FRANCIS POTTERES

A Neat Conversion.

[5432.]—I enclose a photograph of a 1905 Quadrant surface carburetter, which I have altered and brough little more up to date. I had to have the frame cut d by a practical man and new piston and rings fitted.



The converted 1905 Quadrant referred to in the letter signed Novice.

fitted all the other parts myself, including 1910 B.B. carburetter. I am only able to ride week-ends, b manage to get out and home and reach the legal lin

I have had one very nice week-end ride, South ton, Dorchester, Bridport, Crewkerne, Yeovil, Shaftes Salisbury, Southampton, and did not touch the too which I think very good for a NOVI

The Ideal Motor Cycle.

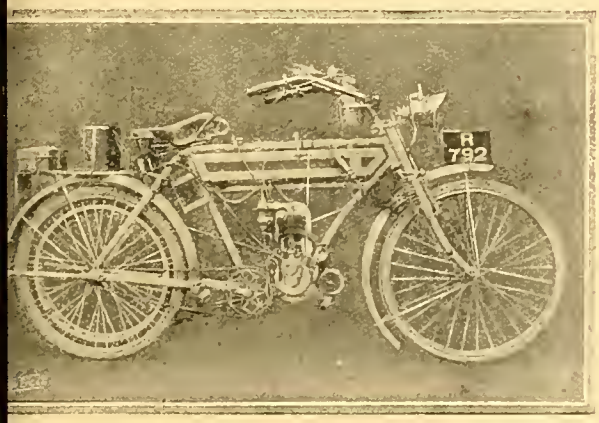
433.]—Regarding the article by Mr. R. Rüde, "My l Motor Cycle," I like his idea exceedingly, but am led at the suggestion to make a compression-tight heel.

rely there is some other way to accomplish the desired I refuse to believe it possible to make and retain mpression-tight joint at the periphery of a five-inch heel making, say, 2,000 revolutions per minute without us loss of power—indeed so much so as to render the gn impracticable.

THOS. F. HUNT.

A Promising Home-made Lightweight.

434.]—I am sending you a photograph of my light- ht motor cycle, made throughout by myself. The engine ted with an outside flywheel, long bronze bushes, and matic inlet valve. The bore and stroke of the cylinder 55 × 70 mm. I think this is about the smallest engine



E. Russell's home-made lightweight.

he road, but is most powerful for its size. I can do .p.h. on the level, and climb all ordinary hills without l assistance. The ignition is Hellesen throughout, plain and dry battery, one cell lasting for about 2,000 miles.

EDGAR RUSSELL.

An Explanation.

435.]—We note in a recent issue of your journal that have received a letter from Mr. Cooke stating that the f his name in our advertisement was not authorised im.

reply, we beg to say that Mr. W. Cooper kindly con- d to act as a member of the committee of the organisa- and being, we understand, intimately connected with Cooke and Mr. Colliver, suggested that both these emen would, on his recommendation, be willing to t a seat on the committee.

subsequently understood from Mr. Cooper that he seen these gentlemen on the matter, and had submitted hem full written particulars of the scheme, and he med us that they had given their consent to act. On pt of Mr. Cooper's information we inserted the names hese gentlemen, together with that of Mr. Cooper, in dvertisement, and until we interview the latter gentle- which we shall do as soon as possible, we are abso- at a loss to understand how this *contretemps* has n.

e further note your comment *re* the capital of the pany, and regret that it was not clearly stated in the rtisement that the capital was the registered capital e company.

would, however, point out that the subscribed capital not represent the financial strength of the company, er does it affect the satisfactory working of the nisation. Further, should any member find that the prised agents will not afford free garage or effect repairs he standard tariff rates the company will return his ription upon receipt of the membership ticket.

may say we have endeavoured to get in touch with Mr. Cooper, but up to the time of writing this letter with out success owing to his absence from town.

DOUGLAS AND OLIVER, LTD.
A. E. HORSTEAD, Secretary.

[Messrs. Douglas and Oliver, Ltd., make it clear in the above letter that the £30,000 capital mentioned by them was merely the "registered" capital of the company and not the "subscribed" capital. With regard to the reference to their financial strength, we may say the financial strength of any company depends upon the capital *subscribed*, and is only varied by the accumulation of profits or losses. We notice in their later announcements that the whole of the facts as to capital are set out, and it seems to us a pity that this was not done in the first place in order to disarm criticism. We have been shown a large number of applications received by Messrs. Douglas and Oliver, Ltd., from agents who undertake to do repairs at certain schedule rates and to provide free garage, and we have no doubt that, if motor cyclists consider the rates scheduled are attractive and subscribe, they will experience no difficulty in connection with the repairs and garage. The capital question, so far as this scheme is concerned, in our opinion, only affects the ultimate permanence of the arrangement, and whether it proves sufficient or not in the long run depends upon the success of the scheme. We believe, after what we have seen, that the intentions of the promoters are *bona-fide*. —ED.]

A Week-end on a Two-speed Douglas.

[5436.]—Your representative's experiences on the two-speed Douglas have proved very interesting reading to me and will no doubt be to other lightweight enthusiasts. Your article, however, leads one to think that the various accessories mentioned therein, such as lamp, horn, and spares (without forgetting the belt knife), are part and parcel of the usual equipment sent out with every Douglas machine, and included in the catalogue price, but I doubt very much if such is the case, although most riders are of the opinion that it should be so, judging from the past correspondence in your columns. When one takes into consideration the fact that an additional £5 note practically has to be spent over and above the cost of the machine itself, intending purchasers begin to wonder where the initial expense will end, particularly if they only ride for pleasure, and not on business bent. P.

[Our remarks were not intended to convey the idea that the very complete equipment we referred to was included with every Douglas sent out. Regarding our suggestion of a removable jet, Messrs. Douglas Bros. write that the reason they prefer not to fit a detachable jet is because trouble is caused through the jet being broken off by screwing too tightly, or when not screwed tight enough leakages occur. ED.]

Tapless Oil Pumps.

[5437.]—There can be only one inference which the Rex Motor Mfg. Co., Ltd., wish your readers to draw from their letter in your last issue, viz., that they had a prior patent to that in my name, and, having dropped it, anyone may make or fit the oil pump. Please let me say in reply that the Rex Co.'s patent was subsequent to mine. The writer's patent is No. 21,815 of 1909. The Rex Co.'s patent is No. 29,528 of the same year. E. C. MIDDLETON.

A Silent Motor Cycle.

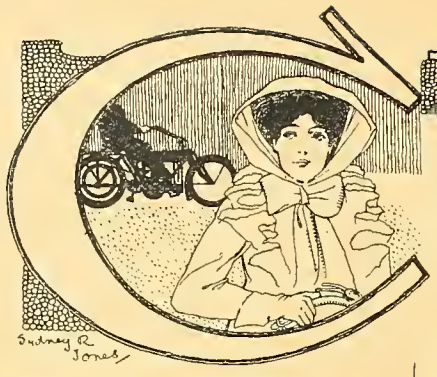
[5438.]—Referring to letter No. 5402 in last week's issue, the machine referred to passed me the same morning, but with open exhaust. It was driven in the Exeter run by a Mr. Thompson, I believe, being almost the last machine out from Hounslow. SOUTHCOMBE MAY.

[Mr. H. A. Thompson drove an 8 h.p. Crowsley bicar with J.A.P. engine in the Exeter run.—ED.]

SUMMARY OF CORRESPONDENCE.

Mr. G. Gray (Orpington) wishes to thank those who have been so kind as to take enquiries in connection with his accident, and to assure them that he is making good progress towards recovery.

Brown and Barlow, Ltd., write: "May we ask you to notify your readers not to accept from anyone carburetters of our make which have had the rotation numbers filed off the bottom of the float chamber."



OUR CURRENT CHAT

Special Features

IN THE WILDS OF NORTH DEVON.

THE SIX DAYS AND QUARTER TRIALS: MAPS OF THE SELECT ROUTES.

WINTER RELIABILITY TEST IN T MIDLANDS.

Time to light Lamps
(Greenwich)

Mar.	2nd	6.40 p.m.
,,	4th	6.44 p.m.
,,	6th	6.47 p.m.
,,	9th	6.52 p.m.

Machines in the Quarterly Trial.

We are asked to correct a rumour that no single-geared machine will be allowed to gain a first-class certificate in the A.C.U. Quarterly Trials. This is not so. To gain a first-class certificate a competing motor bicycle must be fitted either with a change speed gear or a free engine clutch. This rule was made perfectly clear in *The Motor Cycle* of January 12th.

American Records Rejected.

Three weeks ago we published a photograph of C. W. Balke, an American rider of an Indian, and some times he claimed as world's records. The F.A.M. has now resolved to reject the times because of laxity and violation of the rules. After the trial the engine was measured, and found to exceed the limit capacity, and then, after being permitted to remain unsealed, was again measured, and found under size.

De Rosier's Wonderful Ride.

The details of Jake De Rosier's record ride on a 7 h.p. Indian last month form most interesting reading. We have already chronicled the news that he covered 84 miles 135 yards in an hour, and it seems likely that these and intermediate figures will be accepted as world's records in the States, as the trial was officially sanctioned by the F.A.M., and there were a number of responsible supervising officials. De Rosier selected the new track at Los Angeles (California) for his onslaught, and but for running out of petrol at the 93rd mile it is highly probable that the 100 miles record would also have been improved upon. We give below the figures as they were announced, and it may be of interest to observe that the previous best in an hour stood to the credit of De Rosier with 79 miles 1,540 yards.

New records.		Distance		Old records.
M. S.				M. S.
0 41 1/5	...	1 mile	...	0 41 1/5
3 29 1/5	...	5 miles	...	3 37 4/5
7 1 4/5	...	10 miles	...	7 20 3/5
10 35	...	15 miles	...	11 5 3/5
14 10	...	20 miles	...	14 45 1/5
17 44 3/5	...	25 miles	...	18 26 2/5
21 19 2/5	..	30 miles	...	22 6
24 54 2/5	...	35 miles	...	25 51
28 30 2/5	...	40 miles	...	29 49 3/5
32 6 2/5	..	45 miles	...	33 33 2/5
35 41 4/5	..	50 miles	...	37 16 1/5
54 0	..	75 miles	...	56 13 1/5

84 mls. 135 yds. 1 hour 79 mls. 1,540 yds.
92 mls. 1h. 6m. 35s. 90 mls. 1h. 7m. 44 1/5s.

Martin and the Tourist Trophy.

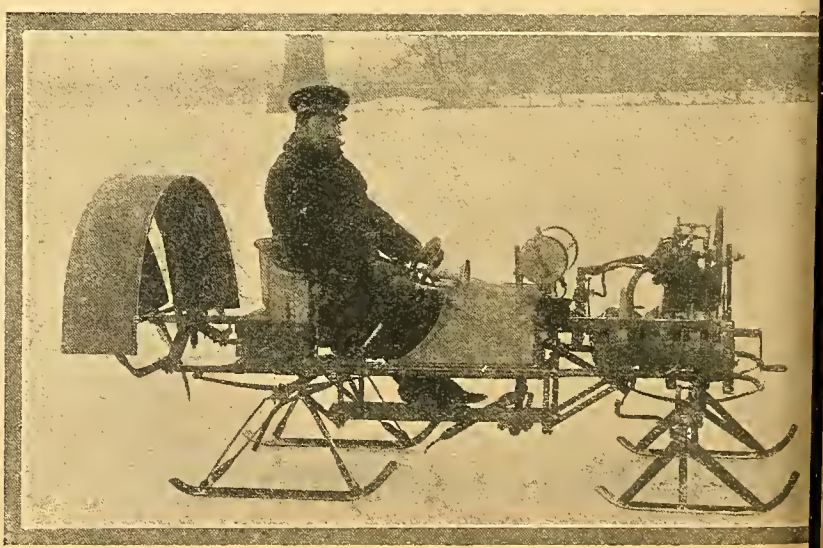
Harry Martin, the well-known racing motor cyclist, informs us that he is preparing to extend his business and to place on the market a machine which will be known as the "Martin." For the Tourist Trophy Race he is building up two "Martin" machines, one of which will be ridden by a private owner (David C. Bolt and the other by himself. B machines will be entered in junior class, and will be fitted w twin J.A.P. engines, 76 × 74 m Bosch magneto, Continental ty Armstrong three-speed gear, A.S.L. forks. Martin will also rid machine fitted with J.A.P. engine the senior class.

FUTURE EVENTS.

Mar.	18	—B.M.C.R.C. first 1911 meeting at Brooklands.
,,	23	—A.C.U. Annual General Meeting.
,,	25	—Meeting at Brooklands.
Apr.	1	—M.C.C. Opening Run to Brighton.
,,	1	—Oxford M.C.C. Open Hill Climb.
,,	14-17	—M.C.C. London-Land's End Trial and Easter Tour.
,,	14-17	—Herts County A.C. Harrogate Tour and Open Inter-club Hill Climb at Sutton Bank on Easter Saturday.
,,	17	—Westmorland M.C.C. Open Hill Climb on Shap Fell
,,	22	—A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,,	29	—Bristol B. & M.C. Open Hill Climb.
May	6	—Herts. County A.C. Open Hill Climb.
,,	27	—Herts. County A.C. Open Speed Trials.

No Need for a Free Engine (?)

In the Derby Club's trial to Bux last Saturday, a competitor, Ed Russell, riding a 1½ h.p. lightwei of his own make (which is il trated in our letters columns week), demonstrated a novel of starting his machine. Sit across the saddle, he lifted the b wheel clear of the ground by gripp hold of the saddle with one hand, started the engine with a dig of pedals. Speeding the engine up, dropped the back wheel on to ground and actually got away f the standstill without stopping engine. Not very good for the b tyre, we should say! By the w Mr. Russell is contemplating build a similar engine for the T.T., but 300 c.c. capacity. It has an out flywheel and a separate cylinder h



A sleigh fitted with a twin-cylinder V-type air-cooled motor cycle engine of 8 h.p.. The sleigh driven by a screw-propeller enclosed in a wire guard behind the driver's seat, and has attained speed of 25 miles an hour. The designer is an engineer named J. Maurer who proposes to experime with a similar arrangement for driving a runabout.

omething Like a Hill.

Chalk Pit and Cudham hills have a ormidable rival in the newly "dis-overed" acclivity named Salt Box ill, branching off from the direct ondon-Westerham road. It takes a ell-tuned and powerful machine to ake a clean ascent, and no passenger otor cycle has, so far as we know, ttempted the feat.

he Personally Conducted Hill Tour.

B. Alan Hill writes that R. Sur-dge, on a single-geared 3½ h.p. udge-Whitworth, was the first to ake a clean ascent of Salt Box Hill n the above tour, which was described n the last issue. He adds that his wo-speed Rudge also made a clean scent at the first attempt of every ill encountered on this tour.

he April Quarterly Trial.

The course in Yorkshire selected for he Spring Quarterly Trial on the aturday following Eastertide will nsily eclipse in severity any course et chosen. Besides Sutton Bank, hich must be climbed "on the run," everal other exceptionally severe scents are included. Successful achines will certainly have to be of he go-anywhere kind.

We hope the A.C.U. has not selected o severe a course, but those who ome through the test with a clean heet will have good reason to be roud of their performances.

istoric Ruins o.. the Route.

The Quarterly Trials course decided pon is not only severe but also most teresting. Three famous Yorkshire bbeys are passed—Rievaulx Abbey, ear Helmsley; Whitby Abbey, which an be seen on the top of the hill pposite the Royal Hotel, where uncheon will be served; and Byland bbey, situated near Tontine Inn.

ovel Design of Tricar.

A member of our staff saw a new orm of passenger three-wheeler on he Birmingham-Coventry Road at he week-end. The machine has a ingle driving wheel, and the two assengers were seated tandem fashion, he front one steering the machine by neans of a wheel. The propelling gency is a twin-cylinder J.A.P. ngine driving through a chain-drive nd change-speed gear box. We have eason to believe that the tricar is one hat has been built at the works of he Bowden Brake Co., and readers ay expect to hear more of it anon.

he Six Days' Trials Course.

This week we are enabled to pub-sh the first complete map of the ourse for the Six Days Trials which ill be held in August next. The ap and routes will be found on the wo centre pages, and we take this pportunity of pointing out that the any references to "hill-climbs" do ot mean that a timed hill-climb will e held at each, but merely that a election will be made from the umerous steep hills which abound on he routes chosen. Nearly every hill arked is of exceptional severity, and o difficulty will be found in choosing test hill for each day's ride.

Our Eighth Annual Spring Number.

The principal contents of *The Motor Cycle* eighth annual spring number to appear on Thursday, March 23rd, will be as under:

TEN YEARS' PROGRESS IN MOTOR CYCLE DESIGN. Illustrated by valuable old photographs of 1901 pattern motor cycles to present day models.

EXTREMES MEET. My most enjoyable and miserable motor cycle rides. By B. H. Davies.

SIDECAR SUGGESTIONS. By Miss Beatrice Langston and P. W. Bischoff.

PREPARING FOR THE ROAD. Useful advice for novices taking up the pastime. Illustrated by simple sketches.

SOME LESSER KNOWN ACCLIVITIES. Descriptions and illustrations of formidable ascents in North, South, East, and West.

WILD-FOWLING. A sportsman's use for his motor cycle. With exclusive illustrations by our own photographer.

FAMILIAR MOTOR CYCLING TERMS ILLUSTRATED. By G. E. Shepheard.

EASTER COMPETITIONS. A brief review of the motor cycle trials arranged for Eastertide.

B.M.C.R.C. BROOKLANDS MEETING. A description of the previous Saturday's first 1911 meeting.

Numerous illustrations will be included in this issue.

Death of Madame Longuemare.

We regret to have to announce the death of Madame Longuemare, the mother of the inventors of the well-known carburetter, at one time so popular on motor bicycles. Madame Longuemare took an active interest in the business, and was often to be seen in charge of a stand at the shows in England some years ago. She was ever a familiar figure on these occasions.

M.C.C. London-Land's End and Back.

The route for the above event, which will take place April 14-18th, has been slightly altered. Instead of following the usual road, *via* Oakehampton, Launceston, Bodmin, riders will travel over Dartmoor by Moreton Hampstead, Two Bridges, Tavistock, Liskeard, Truro, Redruth, and Penzance to Land's End. The Contour Road Book gives the hills between Exeter and Moreton Hampstead as very severe and nearly all are marked dangerous.

Mileage of Dunlop Tyres.

At the annual dinner of the staff of the Dunlop Pneumatic Tyre Co., at the Imperial Hotel, Birmingham, on Saturday last, Mr. Harvey duCros, in replying to the toast of "Our Guest," made a notable reference to the life of the Dunlop tyre as established by the splendid system of testing adopted by the firm of W. and G. duCros in connection with taxicabs. Since this system was inaugurated in June, 1909, the mileage covered by Dunlop tyres which have passed through the test amounts to 92 million miles, and the average mileage of each tyre works out at about 9,000 miles. This is magnificent testimony to their excellence, and motor cyclists may reasonably expect the same degree of quality in the motor cycle tyre.

The Six Days' Record.

A North-country amateur rider is, we understand, about to attempt to cover 2,134 miles in one week on a 2½ h.p. motor bicycle, and thus beat the long distance performance established by A. E. Catt last November.

A.C.U. Decision re Road Records.

The question of officially recognising long distance records recently came before the A.C.U., and it was decided that the Union could not recognise such trials in which the legal limit was exceeded. In cases, however, in which the legal limit was adhered to, the Union would officially recognise the performances, provided the entrant paid the expenses of the time-keeping and official observation.

Motor Cycle Show at Oxford.

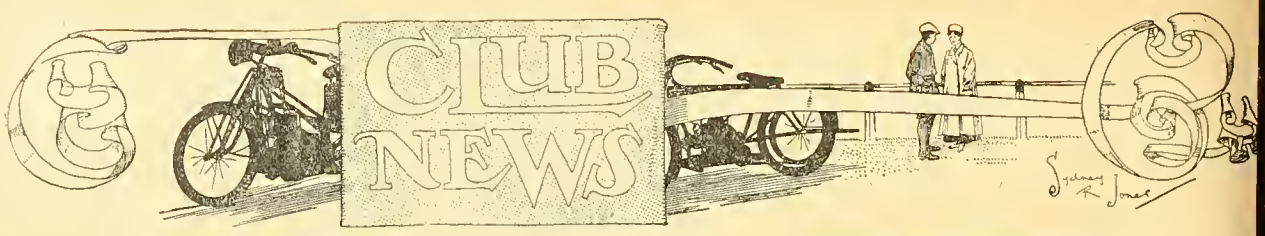
The above show was opened on Friday last, the 24th ult., at Morris Garage, Oxford. The exhibits include the following motor cycles: Matchless, Indian, Triumph, Z.L., L.M.C., Singer, Calthorpe, M.M., Kerry-Abingdon, F.N., Clyno, and Moto-Rêve. Mills-Fulford and Montgomery sidecars, tyres, belts, and tools are also on view. In addition there is a representative exhibit of well-known motor spirits and lubricating oils. The show is open daily from 11 a.m. until 9 p.m. until March 4th. The organising secretary is R. A. Bishop.

A Gentle Hint.

Major Nott-Bower, the Chief Constable of the North Riding of Yorkshire, is a thorough sportsman, and takes a keen interest in the Sutton Bank Hill-climbs. Complaints, however, have reached him that motor cyclists have been driving too fast and too recklessly through Thirsk and the village of Sutton on days previous to the competitions. Riders who are anxious to try this formidable hill are, therefore, given the gentle hint to drive with due caution in populous places, or otherwise the Chief Constable will be perfectly justified in taking whatever steps he thinks fit.

Road Obstructions.

Mr. H. W. Turner, of Manchester, writes that on the road from Middlesbrough to Yarm and Thirsk, last month, he came across a single row of stones placed along the left wheel track. The exact spot was from Crathorne to Trenholme Bar station. The stones were in a single row with intervals between which were devoid of stones. The samples sent us by Mr. Turner are rough flints about 3in. by 2¼in. by 1¾in., and it seems strange that a similar occurrence was mentioned in *The Motor Cycle* about a year ago. On that occasion Mr. Turner saw a man placing similar stones in the same position at about 2.30 on a Saturday afternoon. As there appears to be no apparent reason for placing stones on the road in this manner we would suggest that the motoring organisations should make enquiries into the matter. A single row of large stones cannot very well be rolled into a hard road by passing traffic, and they are extremely dangerous to all road users.



Derby and District M.C.C.

Over sixty members of this club were present at the first annual dinner, which was held on the 22nd February, when Mr. A. E. Green occupied the chair. After the distribution of the prizes gained during the last year the Chairman proposed the toast of "Success to the Club," and referred to the great increase in its members, seventy-five having joined during the year.

Formation of a Motor Cycling Club.

The Swadlincote and District Motor Cycle Club held its initial meeting on February 20th, at Messrs. Curry's Cycle Depot, Swadlincote. A fair number of enthusiasts from Swadlincote, Woodville, and Newhall were present, and the formation of the club was unanimously decided upon. A committee was appointed, and the secretary of the club is Mr. H. Hardwick, Rose Cottage, Newhall, Burton-on-Trent.

A Proposed Club for Newcastle, Staffs.

Many local suggestions have been made for the formation of a motor cycle club in this district, and a meeting has been called of those interested for March 9th, at the Castle Hotel, at 7.30 p.m. All motor cyclists in the neighbourhood are invited to come to this meeting, and Mr. R. T. Ashton, of 36, High Street, Newcastle, will be glad to hear from anyone who would like to join this club, but who will be unable to attend the meeting.

Coventry and Warwickshire M.C.

The seventh annual dinner, held in the historic St. Mary's Hall, Coventry, proved a great success, eighty-four sitting down to an excellent repast. Mr. John V. Pugh presided, and amongst those present were Mr. J. W. Orde, secretary of the R.A.C., who proposed "The Club," and made the first official announcement regarding the formation of a National Council of motorists which is dealt with in a leaderette this week. The president then presented the prizes won during last year. Mr. V. A. Holroyd (chairman) thanked the prize donors for their generosity, and Mr. F. Straight responding for the visitors mentioned that he hoped to come to some satisfactory arrangement between the A.C.U. and C. and M.C.M. and T.U. respecting trials, etc., if Mr. Alfred Bednell, the secretary of the latter body, and he could meet. Mr. H. W. Staner in proposing the toast of the president pointed out that Mr. Pugh often took part in the club events on a motor cycle, leaving his car for officials, and he could not imagine anything more sporting than that. The president replied suitably.

Sheffield and Hallamshire M.C.C.

An exceedingly instructive lecture was delivered o Thursday, the 23rd ult., before sixty members of the abov club by Mr. Jas. L. Norton, of Birmingham, on a comparis of the two and four stroke motors with a history of th former types. The lecture was splendidly illustrated by mea of cardboard working models. An interesting discussio followed. Mr. Norton's self-sacrifice in lecturing whe unwell, and in defiance of doctor's orders, was very muc appreciated.

North-Eastern Automobile Association.

The annual meeting of the North-Eastern Automobile Ass ciation was held at the County Hotel, Newcastle-on-Tyne, Thursday night, the chairman, Major H. S. Streatfield, pr siding over a good attendance.

The hon. sec., Mr. J. E. Hodgkin, M.I.E.E., Darlingto presented the annual report to the committee, in which was shown that the membership was now 848, the affiliatio of the Newcastle and District Motor Club, Ltd., and t newly formed Durham and District Motor Club havi resulted in a large influx of new members.

An Inter-team Trial.

The Bristol and Exeter Motor Cycle Clubs competed an inter-trial run last Saturday. Each team of six men w to ride at a schedule of 20 m.p.h., and all the team were arrive at Taunton at once, each team being penalised points for every minute late or early, and the team losing t smallest number of points to be declared winners, and t losers to pay for dinner for themselves and the winning tea

The Exeter team unfortunately did not adhere to the co ditions laid down, *i.e.*, "all coming in at once," but ca in at intervals of five minutes, and so were disqualifie The Bristol team made a similar mistake, one of their te running in front of the others and so letting the club dow but it must be said that generally speaking the Exeter cl did best performance, as two of the Bristol men retired about half distance. The wind and rain were very bad, a there were many sideslips. The competing teams were :

Exeter.—J. Milner, S. Saunders, A. Tucker, and Rendall (3½ h.p. Triumphs). E. Babbington (3½ h.p. Ba and L. Wilson (3½ h.p. Quadrant).

Bristol.—Philip Grout (8-10 h.p. Chater-Lea-Jap and si car), E. Kickham, Clarke, Grace, and Wiltshire (2¾ h Douglas), J. B. Kellar (3½ h.p. Triumph), and H. Blo sidge (3½ h.p. Rex). Wiltshire and Blocksidge retired half-way.

Exeter and D triet M.C.C. a Bristol B. & M Inter-club co petition. T meeting at Ta ton. The me bers of the Exe team are ast their motor cy and the Bri team standing tween the Ex riders.

Club News.—

Surrey M.C.C.

The illustration shows the handsome challenge cup presented to the club by the Triumph Cycle Co., to be competed for in the club's annual reliability trial and will be awarded for the best single-cylinder machine. The event takes place on June 13th and 14th, starting at 11 p.m. on Tuesday night. The course will be from Guildford to Exeter and back.

Triumph cup presented to the Surrey M.C.C. for a reliability trial to Exeter and back.

Oxford M.C.C.

A breakdown competition was held on the 21st ult. at the Morris Garage, Oxford. Each competitor had four minutes to locate the fault. Eventually H. Braithwaite proved to be the winner, finding that the magneto main wheel was loose on armature spindle. The Rev. F. Mansell Marry acted as judge and Mr. H. A. T. Lackford as timekeeper. After a short explanation and discussion on the fault and instructions how it might be put right, light refreshments were served, followed by a musical evening. The next event in connection with this club will be a hill-climbing competition on March 11th. The open hill-climb is fixed for April 8th.

Newport (Mon.) and District M.C.C.

The annual general meeting will be held at headquarters, Queen's Hotel, on Saturday next, at 7.45, when all local riders are requested to attend.

Bishop Auckland, Darlington, and District M.C

The annual hot-pot supper and smoking concert, at the Peace Hotel, Darlington, was held on Wednesday, 22nd ult., when over forty members and friends were present. Mr. J. Pickell, captain of the club, presided. Following the repast, the chairman presented the prizes won in the 1910 competitions.

Proposed Club for Hereford and District.

With a view to the formation of a motor cycle club for Herefordshire all interested readers are invited to attend a provisional meeting to be held at the Mitre Hotel, Broad Street, Hereford, at 7.30 p.m., on Thursday, March 9th. Those wishing to attend are asked to send their names and addresses to F. W. Carryer, c/o the Mitre Hotel, Hereford, who is acting as hon. sec. *pro tem.*

Willesden Green C. and M.C.C.

Motor cyclists residing in the Willesden district are cordially invited to become members of the above club. The headquarters are at the Rising Sun, Harlesden Road, Willesden Green. The entrance fee is 2s. 6d., with an annual subscription of 4s. Runs are held every Sunday, leaving headquarters at 10 o'clock. On Thursday, March 2nd, there will be a Cinderella dance at Linacre Hall, Willesden Green. Intending members should apply to Mr. J. C. Ball, hon. sec., 5, Chapter Road, Willesden Green, N.W.

Southampton and District M.C.

An important meeting of the members was held at the club's headquarters, "The Cowherds," the Avenue, Southampton, on Wednesday evening, February 22nd, when the principal business was the question of the club's co-operating in the formation of the new county club, to be called the Hampshire County Motor Cycle Club. After the discussion the resolution in favour of joining the County Club was passed unanimously, and it was announced that the affiliation fees would be paid from the club funds without increasing the members' annual subscription.

It has been left to the Southampton Club to organise a combined opening run of the new County Club, which will take place on Good Friday, the destination being Bishop's Waltham.

Leicester and District M.C.C.

The opening run is to Billesdon on the 19th inst., assembling at Humberstone tram terminus at 2.30.

Walthamstow M.C.

The following fixtures have been arranged for March and April. Lantern show to-night (Thursday). House supper. March 16th Opening run, April 1st. Easter tour, April 5th.

Harrogate and District M.C.C.

A lecture was given on Thursday evening, the 23rd ult., by Mr. S. F. Hill on "Internal Combustion Engines as applied to Motor Vehicles and Cycles." The lecture, which was interesting and well illustrated by slides of the leading types of motor and aeroplane engines, proved too long to allow of discussion afterwards.

Herts County A. and A.C. (Motor Cycle Section).

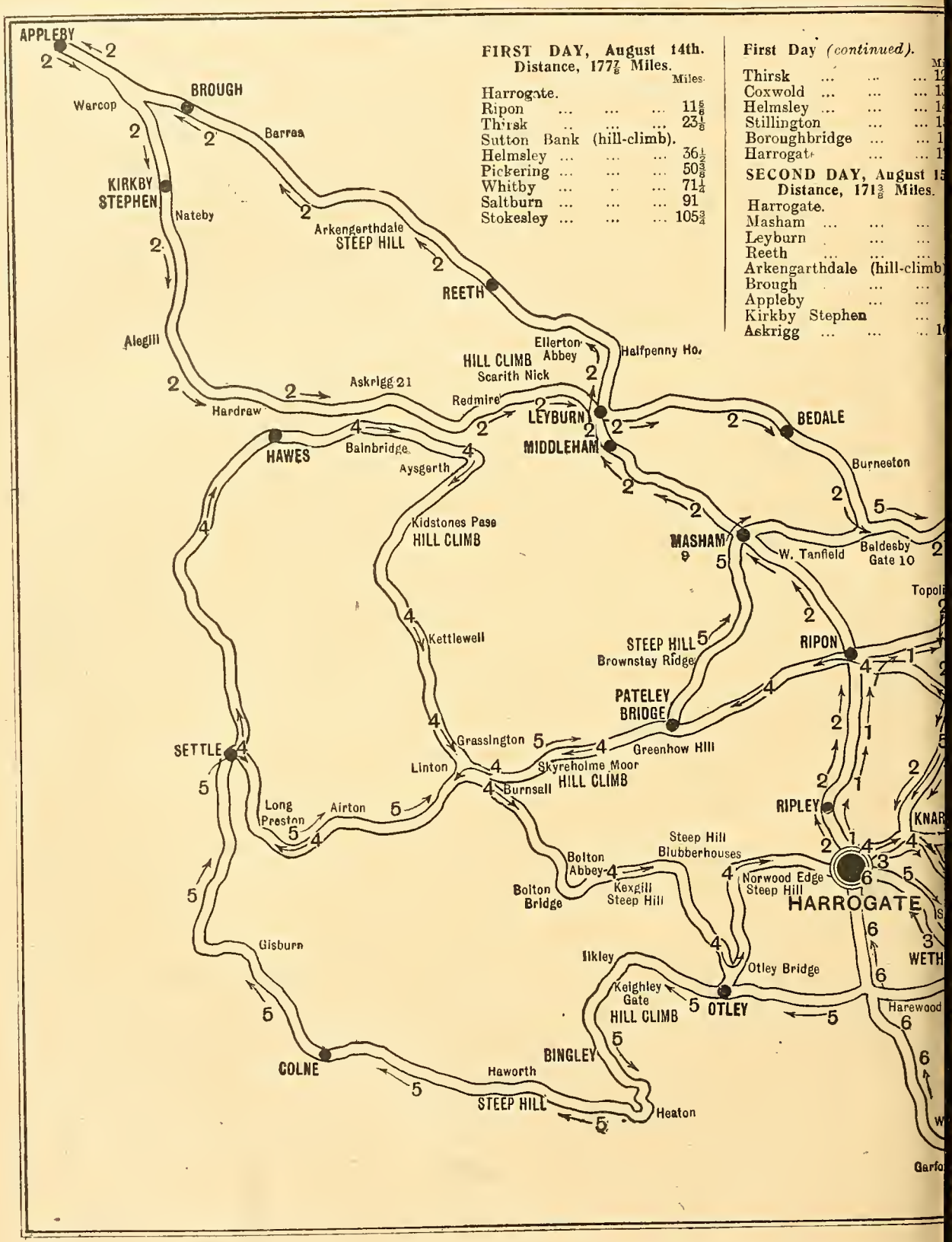
A meeting of the Ladies' Committee responsible for the ladies' trial to Harrogate on April 14th-17th, was held in London on Thursday, February 23rd, when the preliminary arrangements were made. It may be recalled that *The Motor Cycle* has presented a silver cup, which will be won outright by the lady making the best performance on the outward and homeward journeys. In addition, and as an encouragement to new comers, prizes will be offered for the completion of single and double journeys respectively within one hour of the respective schedule times.

The route will be from Barnet by the Great North Road to Peterborough, thence *viâ* Lincoln, Sleaford, Gainsborough, and Doncaster to Harrogate. The entrance fee for the double journey will be 10s. 6d., and for the single journey 6s. 6d.

Further particulars and entry forms may be obtained from Mrs. C. C. Cooke, North Mimms, Hatfield.

With regard to the club's hill-climb on Sutton Bank on Easter Saturday, the Coventry and Warwickshire M.C. desires to take part, and it is to be hoped that this can be satisfactorily arranged, as it would be a splendid sight to see six clubs competing against one another for supremacy on this famous hill.

Midland Retiability Trial. Nearing the top of Warmington, included in the outward run.



FIRST DAY, August 14th.
Distance, 177⅞ Miles.

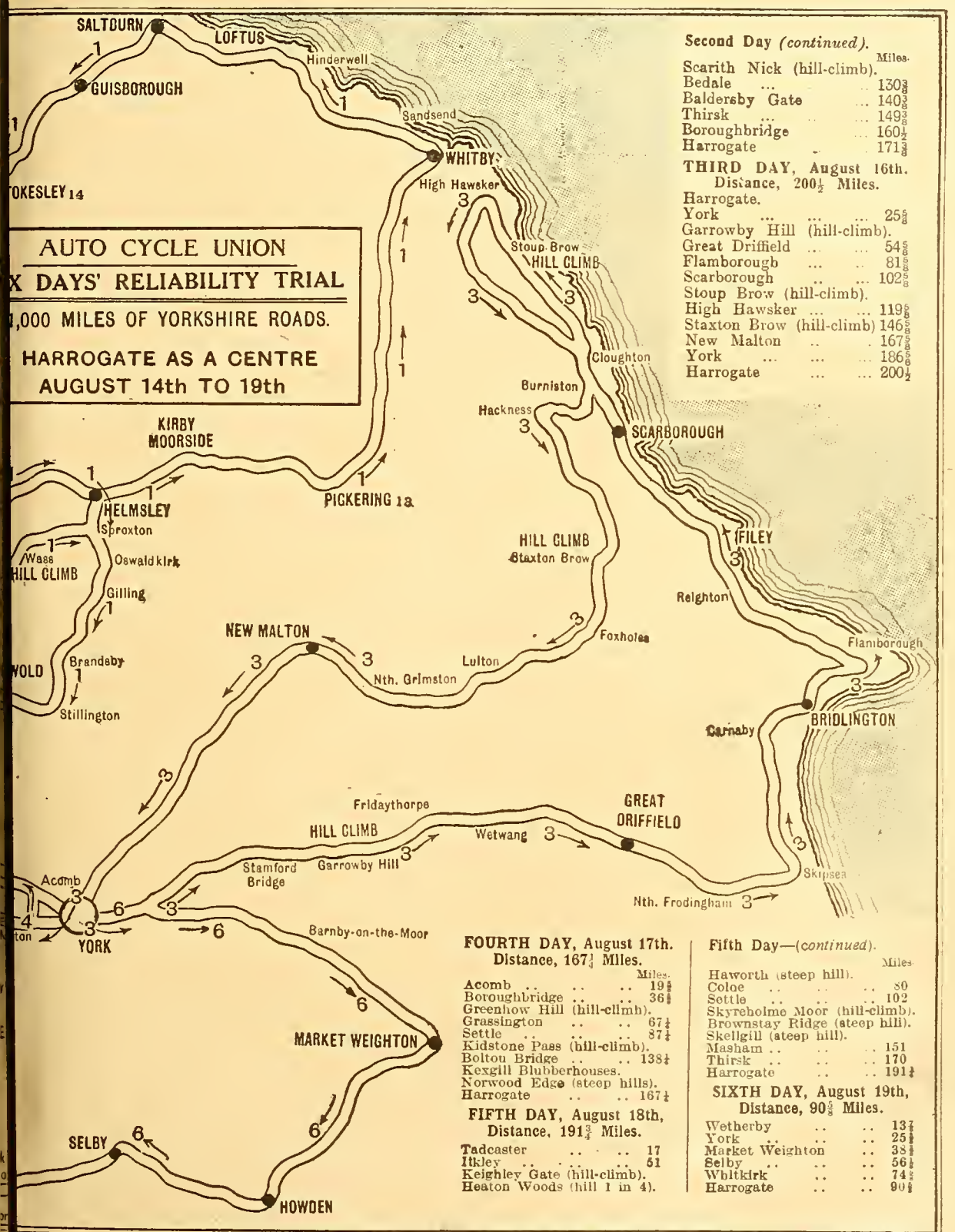
	Miles.
Harrogate.	
Ripon	11⅝
Thirsk	23⅛
Sutton Bank (hill-climb).	
Helmsley	36½
Pickering	50⅝
Whitby	71¼
Saltburn	91
Stokesley	105¾

First Day *(continued).*

	Mi
Thirsk	12
Coxwold	13
Helmsley	1
Stillington	1
Boroughbridge	1
Harrogate	1

SECOND DAY, August 15
Distance, 171⅜ Miles.

Harrogate.	
Masham	
Leyburn	
Reeth	
Arkengarthdale (hill-climb)	
Brough	
Appleby	
Kirkby Stephen ...	
Askrigg	1



AUTO CYCLE UNION
X DAYS' RELIABILITY TRIAL
,000 MILES OF YORKSHIRE ROADS.
HARROGATE AS A CENTRE
AUGUST 14th TO 19th

Second Day *(continued).*

	Miles.
Scarith Nick (hill-climb).	
Bedale	130⅜
Baldersby Gate ...	140⅜
Thirsk	149⅜
Boroughbridge ...	160½
Harrogate ...	171⅜

THIRD DAY, August 16th.
Distance, 200½ Miles.

Harrogate.	
York	25⅝
Garrowby Hill (hill-climb).	
Great Driffield	54⅝
Flamborough	81⅝
Scarborough	102⅝
Stoup Brow (hill-climb).	
High Hawsker	119⅝
Staxton Brow (hill-climb)	146⅝
New Malton	167⅝
York	186⅝
Harrogate	200½

FOURTH DAY, August 17th.
Distance, 167¾ Miles.

	Miles.
Acomb	19¾
Boroughbridge	36¾
Greenhow Hill (hill-climb).	
Grassington	67¾
Settle	87¾
Kidstone Pass (hill-climb).	
Bolton Bridge	138¾
Kexgill Blubberhouses.	
Norwood Edge (steep hills).	
Harrogate	167¾

FIFTH DAY, August 18th,
Distance, 191¾ Miles.

Tadcaster	17
Ilkley	51
Keighley Gate (hill-climb).	
Heaton Woods (hill 1 in 4).	

Fifth Day—*(continued).*

	Miles.
Haworth (steep hill).	
Colne	80
Settle	102
Skyreholme Moor (hill-climb).	
Brownstay Ridge (steep hill).	
Skellgill (steep hill).	
Masham	151
Thirsk	170
Harrogate	191¾

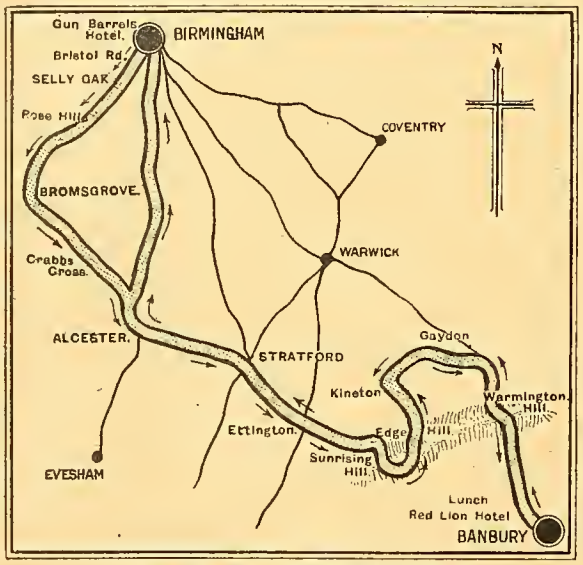
SIXTH DAY, August 19th,
Distance, 90⅝ Miles.

Wetherby	13¾
York	25¾
Market Weighton ...	38¾
Selby	56¾
Whitkirk	74⅛
Harrogate	90⅝

MIDLAND RELIABILITY TRIAL

Exceptionally Severe Conditions.

ORIGINALLY announced and intended as an open event, the Sutton Coldfield A.C. winter reliability trial was successfully carried out last Saturday over a severe course rendered more arduous by the typical February conditions that prevailed. The A.C.U. refused to grant a permit for this event on the ground that it would have been an innovation, so instead of disappointing the entrants the organising club enrolled them all members, to escape the A.C.U. ban. We deal with the matter in a leaderette.



The difficult course of approximately 120 miles.

The trial consisted of a run of about 120 miles, embracing hills of the calibre of Rose Hill, Rednal, and Sunrising, Edge, and Warmington, the three stiff ascents on the famous range of Edge Hills that formed the scene of a battle that we read of in our history books. Such a severe course has hitherto been unknown in motor cycle trials with the possible exception of the Scottish trials, and the roads being covered with a thick coating of tacky mud of varying consistencies, it will occasion no surprise to hear that the non-stops were exceedingly few. More of these trials in winter would serve a useful purpose in focussing attention on the best all-weather mount.

The chief award was the Colmore Cup, kindly presented by Mr. F. S. Whitworth, and a gold medal, whilst silver medals were offered to all who made non-stops.

Of 49 entrants, 46 duly lined up at the Gun Barrels Hotel, Bristol Road, Birmingham, at 9.30 a.m. on Saturday last, and they were despatched in pairs at half-minute intervals, as follows:

J. Woodhouse (3½ h.p. Precision), fixed gear.
Bert Yates (3½ h.p. Humber), two-speed gear.
Douglas Arter (3½ h.p. James), fixed gear.
J. J. Woodgate (3½ h.p. Singer), free engine.
Basil Jones (3½ h.p. Premier), free engine.
W. D. South (3¾ h.p. 1911 Scott), two-speed gear.
F. G. Edmond (3½ h.p. Humber), fixed gear.
H. D. Jones (4 h.p. Zenith-Gradua), variable gear.
H. C. Newman (3½ h.p. Ivy-Precision-Brampton), any gear
Sam Wright (3½ h.p. Humber), two-speed gear.
H. Greaves (2¾ h.p. Enfield), two-speed gear.
Jack Slaughter (3½ h.p. L.M.C.), fixed gear.
W. H. Eggerton (6 h.p. Zenith and sc.), variable gear.
H. Rem Fowler (3½ h.p. Ariel), variable gear.
Geoffrey Smith (3½ h.p. Humber), two-speed gear.
T. Le Marquand (3½ h.p. Ivy), free engine.
James St. John (3½ h.p. Triumph), fixed gear.
Seymour Smith (3½ h.p. Norton), fixed gear.
W. H. Islip (2¾ h.p. Enfield), two-speed gear.
W. W. Douglas (2¾ h.p. Douglas), two-speed gear.
C. S. Burney (3½ h.p. Rudge-Whitworth), free engine.
Phillip Brewster (3½ h.p. Norton), any gear.
E. H. Mills (3½ h.p. James T.T.), fixed gear.
W. H. Watkins (3½ h.p. Premier), free engine.
H. Goldman (5 h.p. Rex), two-speed gear.
R. W. Duke (3½ h.p. Zenith-Gradua), variable gear.
J. Dudley (2½ h.p. Hobart), fixed gear.
P. Phillips (2¾ h.p. Douglas), two-speed gear.
Richard H. Viggers (2¼ h.p. Enfield), fixed gear.
Harry Patterson (2½ h.p. New Hudson), three-speed gear.
C. Perryman (3½ h.p. Ariel), free engine.
H. J. Woodgate (3½ h.p. Premier), free engine.
George Hill (3½ h.p. Ariel), free engine.
G. Patterson, jun. (2½ h.p. New Hudson), three-speed gear
H. R. Purchase (2½ h.p. A.J.S.), two-speed gear.

Competitors crossing the Avon at Stratford.

Midland Reliability Trial.—

R. W. Duke (3½ h.p. Zenith-Gradua) and H. Goldman (5 h.p. Rex) passing the ruins of Edge Hill Tower.

P. J. Evans (3½ h.p. Humber), two-speed gear.
W. B. Gibb (2¾ h.p. Douglas).
W. Nat. Goodman (3½ h.p. Rudge-Whitworth).
H. T. Walden (3½ h.p. Triumph), free engine.
G. E. Stanley (3½ h.p. Singer), free engine.
G. Lee Temple (1½ h.p. Moto-Velo), fixed gear.
H. C. Pickering (2½ h.p. A.J.S.), two-speed gear.
E. B. Ware (8 h.p. Chater-Lea and sc.), three speeds.
G. C. Peart (3½ h.p. Rudge-Whitworth), single gear.
Hillis (T.T. Triumph), single gear.
G. H. Taylor (Rudge-Whitworth), single gear.

One of the non-starters, F. H. Stevenson (8 h.p. Matchless and sidecar) left his machine at a Birmingham garage overnight with a request that it be cleaned. He subsequently called for it to find an attendant busy with a hosepipe, regardless of the delicacy of the mechanism. Two hours later Mr. Stevenson had reassembled the magneto and the carburetter after having perforce to dismantle them to mop out the water. He caught up the competitors at Sunrising.

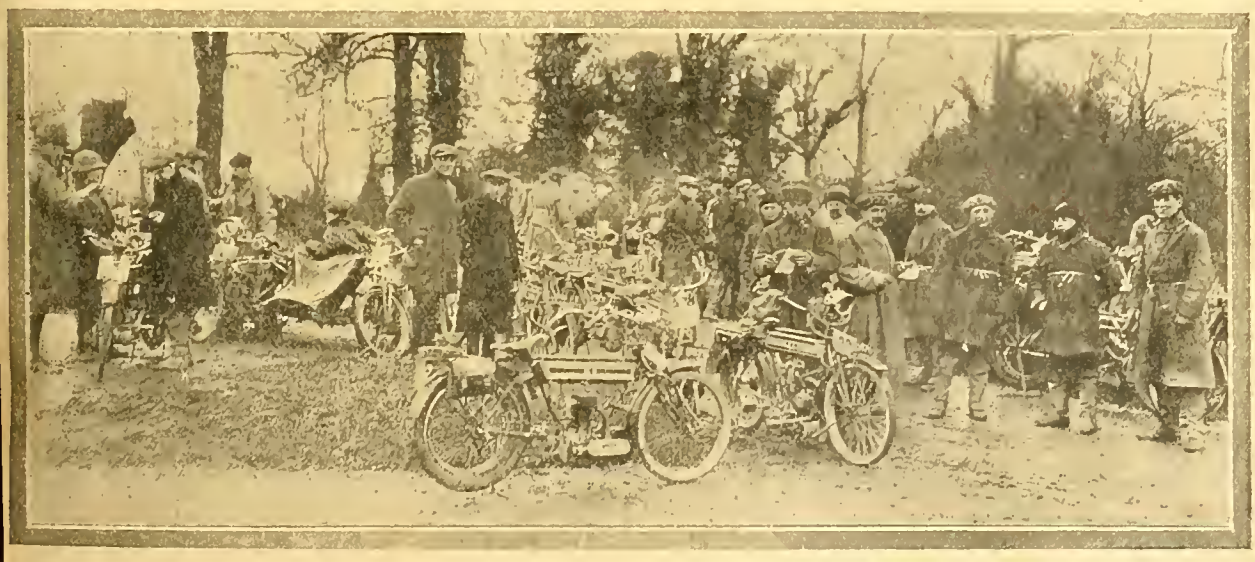
Once clear of the tramlines the going was good to Selly Oak and Rose Hill, which was in fair condition. Here Geoffrey Smith, who was trying out a brand-new two-speed Humber, was obliged to dismount near the top owing to the change-speed plunger sticking and thus refusing to release the high gear. Through Bromsgrove, Crabb's Cross, Alcester, Stratford, and Ettington the road is of an undulating nature, and, notwithstanding the absence of direction arrows, the competitors had little difficulty in following the course thanks to the excellent route cards and timetable handed to each entrant. As was anticipated, Sunrising unseated a goodly number, but no one expected that over fifty per cent. would fail, despite the heavy roads. Undoubtedly the fact of having to attempt the climb with hot engines accounted for such a large percentage of failures. This was further proved by the fact that one or two descended the hill and successfully accounted for the ascent at the second time of asking.

The Performances on Sunrising.

The fastest ascents of Sunrising were clearly those of G. E. Stanley (3½ h.p. Singer), F. G. Edmond (3½ h.p. Humber), and G. H. Taylor (3½ h.p. Rudge-Whitworth)—all single-geared mounts, and R. W. Duke (3½ h.p. Zenith-Gradua). Most of the change-speed machines were also successful. The following failed: J. Woodhouse, D. Arter, Basil Jones, H. C. Newman, P. Brewster, T. le Marquand, C. S. Burney, W. H. Islip, H. Rem Fowler, Jas. St. John, W. H. Eggerton (belt slipping), W. H. Watkins, J. J. Woodgate, R. H. Viggers, Harry Patterson, S. C. Perryman, H. J. Woodgate, G. L. Temple, H. R. Purchase, H. C. Pickering, and G. C. Peart.

J. H. Slaughter assisted his machine near the summit with vigorous digs of his right foot on the ground, whilst Seymour Smith and J. Dudley got up with pedalling. George Temple made a most plucky attempt to climb the hill on his 1½ h.p. Moto-Velo.

Continuing along the summit of Edge Hills past the old Round Tower, the hill leading to Kineton was descended, and, skirting Gaydon, the main Warwick-Banbury road was joined. Hereabouts H.



The compulsory stop at the foot of Warmington Hill. Hereabouts the roads were thickly coated with mud.

Midland Reliability Trial.—

J. W. Woodhouse (Precision) and A. D. Arter (James) passing the Round Tower on the summit of Edge Hill.

C. Pickering, H. Jones, and H. T. Walden were passed tyre repairing. At the foot of Warmington a thirty minutes' halt was called, but all climbed the hill after their engines had cooled down.

Entering Banbury a particularly treacherous stretch of road was encountered, whilst to make matters worse a steam roller was at work. The Red Lion Hotel reminded one of an A.C.U. quarterly trial.

Before restarting on the homeward journey in a contrary direction to the outward run competitors were not allowed to warm their engines on the stands, but on receiving the word to go, officials were stationed to note the ease with which the engines started, and awarded marks accordingly. Before Warmington the unlucky No. 13 (H. Greaves) was passed with the rear tube out, and a few miles further on P. Brewster was seen repairing his belt.

Edge Hill Too Steep for the Majority.

Edge Hill, generally considered to be the steepest of the trio, accounted for still more spoilt records, most who had failed on Sunrising having to dismount and do some useful pushing, although Burney, Arter, and Slaughter this time reached the summit without difficulty. Again Stanley, Taylor, Edmond, and Duke made excellent ascents, whilst W. D. South, one of the few successful amateurs, made a creditable climb on the low gear of his two-stroke machine. This time W. W. Douglas unfortunately changed down badly and stopped his engine. He at once restarted on the gradient and easily topped the ascent.

On a short by-road the competitors followed to Sunrising, there was a layer of loose flints, and one of these went clean through both sides of the inner tube of Bert Yates's machine, which was hard lines for him, as it was stated at the luncheon table that Yates had been running most nearly to the set standard. The descent of Sunrising with its bad corner called for some care. Near Stratford W. H. Islip did not belie his name and came over in the mud, luckily without hurting himself or machine. At Alcester the riders followed the direct Birmingham Road to the tram terminus, but *en route* were stopped at the foot of Gorcott Hill. Between this point and the finish a secret check was arranged to decide the winner in case of a tie. It proved to be half a mile past the top of Gorcott, which most competitors went up at a rare bat.

At the finish an enthusiastic band of officials examined the machines as to their cleanliness or otherwise, and worked until past midnight on the checking sheets in order to issue the results promptly.

Official Results.

Only a round dozen made non-stops, and in most cases they would have tied for first place had not marks been lost for difficult starting at one or other of the four controls.

1. W. D. South (1911 4 h.p. two-speed Scott), Colmore cup and gold medal (presented by Mr. F. S. Whitworth), also gold medal offered for best performance of an amateur, 200 marks.
2. R. W. Duke (3½ h.p. Zenith-Gradua), 200 marks.
3. P. J. Evans (3½ h.p. two-speed Humber), 200 marks.

It has been decided to make a special award of a gold medal to each of these instead of silver medals for non-stops. Three competitors having gained the maximum number of 200 marks, the positions had to be decided according to performance in the secret check.

The check was one mile from the foot of Gorcott, and, therefore, time at schedule rate of 19 m.p.h. should be 3m. 9s.

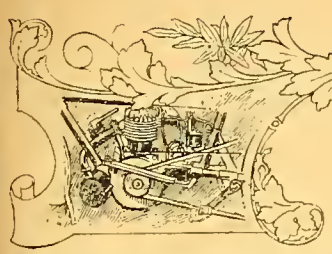
W. D. South was nearest with 3m. 5s.
R. W. Duke, second, 2m. 55s.
P. J. Evans, third, 2m. 38s.

Others making non-stops and gaining silver medals were:

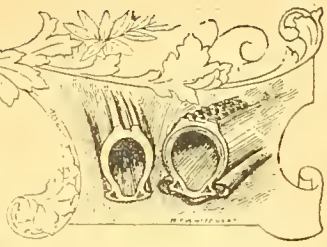
4. Sam Wright (3½ h.p. two-speed Humber), 199 marks.
5. J. H. Mills (3½ h.p. T.T. James), 199 marks, who also gains a silver medal for second best amateur.
6. P. Phillips (Douglas two-speed), 199 marks.
7. F. G. Edmond (3½ h.p. Humber), 198 marks.
8. E. B. Ware (8 h.p. Chater-Lea) and sidecar, 198 marks.
9. W. B. Gibb (two-speed Douglas), 196 marks.
10. G. E. Stanley (Singer free engine), 196 marks.
11. J. Slaughter (L.M.C.), 195 marks.
12. G. Taylor (Rudge-Whitworth), 194 marks.

Much credit is due to Mr. James St. John for the organisation of the trial, and to the willing officials, including, among others, Messrs. Frank Burnett, Howard Smith, H. G. Hill, P. Mosedale, F. S. Whitworth, and A. Manning Lomax.

E. B. Ware (8 h.p. Chater-Lea and sidecar) passing the observers on Edge Hill, approximate gradient 1 in 7.



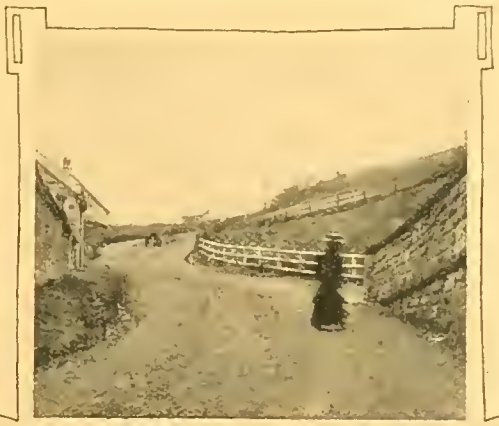
Selection of the April Quarterly Trials Route.



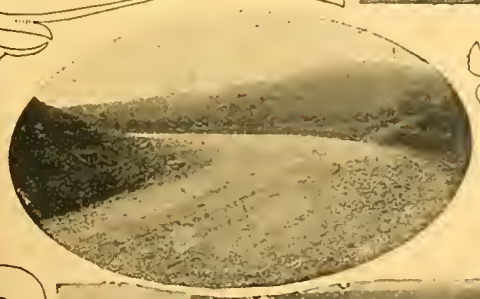
THE course selected by the Auto Cycle Union for the Spring Quarterly Trial was surveyed on Saturday last by Mr. F. Straight and Mr. E. M. P. Boileau, who were accompanied, and very largely assisted, by Messrs. H. W. Fortune and T. Atkinson, of the Harrogate and District M.C.C. The course selected will excel in difficulties any yet selected for the Quarterly Trials. The headquarters for the Quarterly and Six Days' Trials will be the Clarendon, Harrogate, which has excellent garage accommodation. Leaving the hotel the men will take the first turn on the left, and after negotiating the level crossing at Starbeck, proceed straight to Knaresborough and Boroughbridge; good roads are traversed all the way. About one and a half miles beyond Knaresborough there is a turn to the right where the signpost points to Boroughbridge, which may be easily missed. At the end of the village the right-hand road is taken, and thereafter ensues a splendid run to Thirsk. In Dishforth an unexpected turn to the right is taken. After proceeding through Topcliffe, Thirsk is reached. After Thirsk the somewhat rough road is unmistakable to the foot of Sutton Bank. Now intending competitors should bear in mind that to attain a certificate this hill must be climbed unassisted.

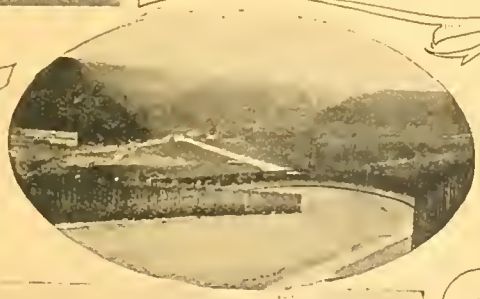
VIEWS OF THE APRIL QUARTERLY TRIALS COURSE, HARROGATE-WHITBY-HARROGATE.

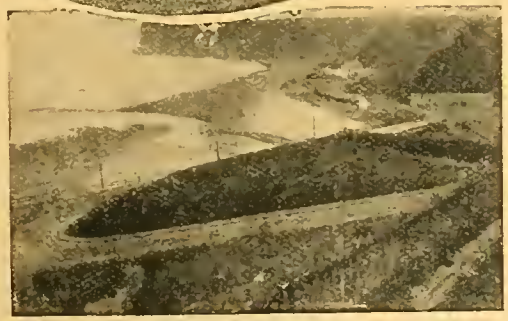
(1.) Lythe Bank, a steep hill rising from Sandsend.



The surface at the moment of writing is rather rough, and fresh stones have been laid on the offside of the trough. Competitors, therefore, should gear and tune their machines accordingly. When the summit has been reached the road to the right is taken, which is rough and rutty, and continues thus till about two miles from Helmsley. The Hambleton Hotel is passed, and at the next fork the right-hand road is taken, the village of Scawton is traversed, and next ensues the descent of Scawton Bank, a precipitous declivity—half-way down the worst gradient (about 1 in 4 or 5) is a stone gulley. Next follows the stiff ascent of Rievaulx Bank. About half a mile further on a turn to the right is taken, and the telegraph poles are followed to Helmsley. Bearing to the right in Aislaby, the road is taken to Pickering, the negotiation of which needs care. After several turnings have been taken, a signpost bearing the words "To Whitby" is seen. This road, which rapidly begins to ascend, is taken, and there is a gradual rise till an altitude of 800ft. is attained. The surface for the most part is good, but in places the road in the distance looks absolutely grass-grown, but on reaching it it is found to be of comparatively good surface. Before reaching Saltergate Inn a severe hairpin (downhill) has to







(2.) A dangerous hill which the competitors descend near Saltergate Inn, on the moors between Pickering and Whitby.

(4.) A stiff and twisty ascent from Saltburn foreshore.

(3 and 5.) Further views of the tortuous rise from Saltburn. The hill in the distance is the one which the competitors descend to the foreshore

THE SPRING QUARTERLY TRIAL

(Yorkshire Centre),

April 22nd.

be negotiated. About eight miles from Saltergate Inn the summit (900ft.) is reached, and thereafter a rapid descent ensues to Sleight, which culminates in Blue Bank, a precipitous declivity.

After Ruswarp there is a very stiff hill, which requires careful negotiation. The route avoids Old Whitby, and nearly brings the riders on to the front opposite the Royal Hotel. Shortly after leaving Whitby a tollgate (1d.) has to be passed, and thereafter ensues a somewhat twisty road, the corners of which require care. After passing close along the seashore at Sandsend, a bridge is crossed, and on passing under the railway bridge to the left the steep ascent up Lythe Bank is negotiated. The gradient is 1 in 4.5 at the outset, and there is no chance of a run. This hill is nearly two miles long. The road is easy to follow, as the telegraph poles show the way. After leaving Hinderwell there is a steep hill leading down into Dalehouse. Opposite a signpost a sharp turn to the right is taken over a bridge round to the right again, and up a terrific hill (Dalehouse Bank), with no possibility of rushing it, which will prove almost as severe a test as Lythe Bank. After Loftus there is another severe hill. These and the other ascents between Whitby and Saltburn are infinitely more severe than Westerham, and are for the most part longer. This exceedingly arduous piece of road culminates in a zigzag ascent of no mean severity into Saltburn. Guisborough is neatly avoided, Stokesley is passed, and a rather winding road is traversed to Thirsk. The day's work is finished by an easy run through Ripon to Ripley, and on to Harrogate. The total distance is 144 miles. The two test hills will be Sutton Bank and Lythe Bank.

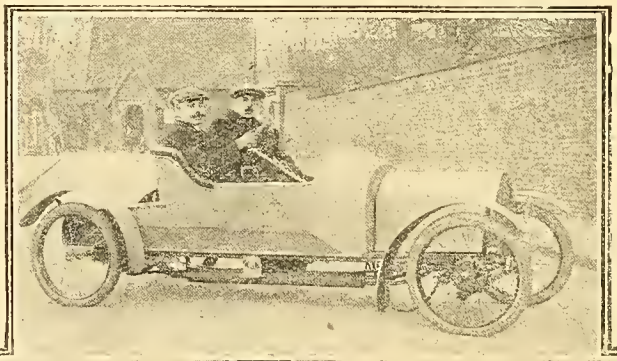
THE GORDON RUNABOUT.

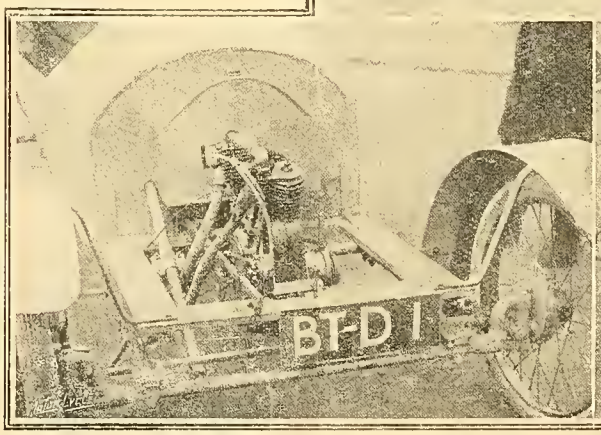
WE recently had the pleasure of a trial run on a new runabout that is about to be placed upon the market by Mr. Gordon Armstrong, proprietor of the East Riding Garage and Engineering Works, Beverley. It is built entirely on motor cycle lines, and weighs complete only 3 cwts. The wheelbase is 8ft., and the chassis is built of steel tubing. The infinitely variable gear permits of any ratio between 4 to 1 and 9 to 1, whilst by the use of the adjustable pulley on the engine-shaft, which is incorporated in a Mabon clutch, gears of 6 to 1 and 11 to 1 may be used.

The transmission is by two belts, one from the engine (a 6 h.p. J.A.P.) to an expanding pulley on the countershaft and from another expanding pulley to the back axle. By sliding the counter-shaft backwards and forwards, and contracting and expanding the pulleys, the ratios are altered.

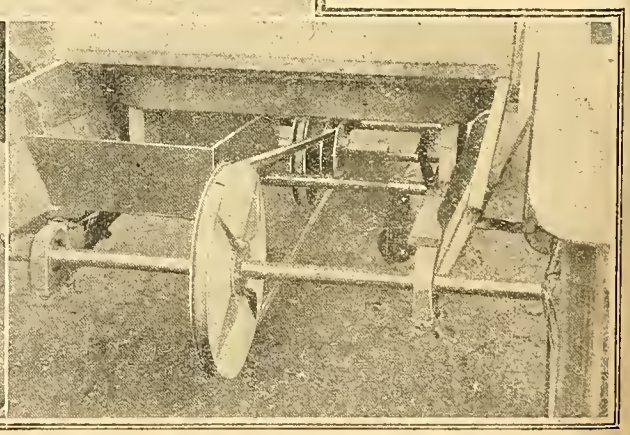
The back axle is ingeniously constructed to overcome the absence of a differential. On one end of a solid shaft is fixed one of the road wheels, and on the centre of the shaft is attached half of the belt pulley. The other half of the belt pulley is attached to a tubular sleeve fitting over the solid shaft and carrying at its extremity the other road wheel. This pulley slipping arrangement allows one half of the pulley to over-run the other when turning corners. During our trial spin no trouble from either gear or differential was experienced, although on leaving Beverley a very severe hill was encountered which was surmounted with ease by means of the variable gear. Other details of this construction are the magneto carried in front of the engine, and the springing, which is on the principle of the Lanchester car. Pedal-operated front wheel internal expanding brakes are also fitted.

Three-quarter view of the Gordon quadcar.





Gordon Quadcar. The power plant. The engine is a 6-7 h.p. twin J.A.P.



Rear view showing the belt drive and specially constructed axle.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Ignition of a V-type Twin.

Kindly tell me—(1.) At what angle should the blades (wipe) be set on the contact of a 60° V twin engine? (2.) Would a plain coil and make and break give better results than a trembler and wipe?—N.W.C.

(1.) The blades should be at 0°—210°. (2.) You will get better results, that is, greater speed and a reduced consumption of current, from a plain coil and make and break contact breaker.

New Piston Rings.

The piston rings on my 6-7 h.p. twin are broken. I shall feel obliged if you will inform me whether I can replace these cast iron rings with mild steel ones or phosphor bronze, and if so which would prove the better of the two? It is almost impossible to get good cast iron out here.—A. A. CARNEGIE (Karachi).

You may use mild steel rings until the proper rings have arrived from England. You must, however, be very careful about lubrication, as there might be a tendency to seize until the rings have become properly run in. Phosphor bronze is quite out of the question, as it would heat up too quickly and the rings would lose their springiness. There is nothing yet discovered better than cast iron.

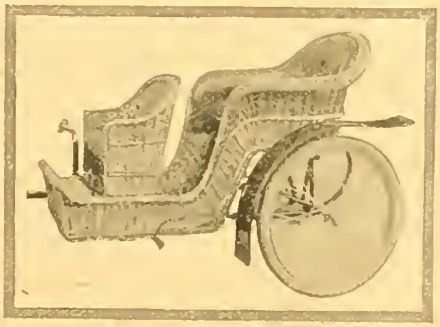
How to Remove a Pulley.

I should be much obliged to you if you would kindly answer me the following questions: (1.) What is the best thing to cure oil leaking through the pulley-shaft bearing? (2.) The proper way to remove a pulley from shaft. (3.) Would it be very uncomfortable to have footboards sloping in front? (4.) Are long heavy machines more likely to skid than light machines?—W. J. MANN.

(1.) To insert a felt washer. (2.) Get three hard wood wedges, drive them in gently at equal distances between pulley and crank case, and give a tap on end of shaft with a hammer. (3.) Footboards would be an improvement, and would make the machine more comfortable. (4.) Machines with a medium length wheelbase are generally admitted to be steadier in grease than machines with a short wheelbase.

Position of Silencer. Overheating.

I am at present getting a good deal of fun out of an old pattern chain driven machine, and I should be glad if you will kindly help me with your advice on a few of the problems which have presented themselves: (1.) Can you tell me what is the approved way of cutting out the power of the engine when slowing down temporarily on a motor cycle with accumulator ignition? (2.) What advantages should I get from converting from trembler coil to plain coil and make and break contact? (3.) On a long hill the engine gets very hot and dies away altogether. Do you think the position of the silencer has anything to do with this, as in my machine it is right to windward of the engine, where it must intercept the cold air and cause only warm air to reach the cylinder ribs, and not so much of that?—T.B.W.



Booth's Motories, Keighley Mills, Bedford Street North, Halifax, are marketing the above sidecar attachment with child's seat in front. A good point is that the extra seat is reversible.

(1.) The best way is to raise the exhaust valve. If the lifter is so adjusted that the valve is raised to its fullest extent you will not get silencer explosions. For controlling the machine you should operate as much as possible on the throttle. (2.) You will get much greater efficiency from the engine and more mileage out of the accumulator. (3.) Yes, this may certainly have something to do with it. Also, if there is any back pressure in the silencer this might be the cause of the trouble.

Chain Transmission.

Is it possible to adapt a motor cycle so that when using a sidecar a chain drive may be employed and when wanted only for solo work a belt drive may be substituted? I am told that a chain drive is best for passenger work.—G.H.N.

It would be possible, but not worth the trouble, and it would be far better to have chain drive permanently. There is no doubt that chain transmission is more popular for passenger work.

Flooded Carburetter.

I have a 1911 B. and B. carburetter on my machine, and I find that if I turn the petrol tap on and wait about half a minute and then start the machine it will commence firing in about six yards. If, however, I flood the carburetter by depressing the small knob the engine is much more trouble to start. I might mention that the machine fires quite regularly while running at all speeds. Will you kindly explain this?—N.F.

Your carburetter is in that happy state when it needs no flooding to start. If, however, you flood the carburetter you cause it to give off too strong a mixture, which is quite as bad for starting as one which is too weak.

Fit of Piston Rings.

Will you kindly answer the following questions: (1.) The cause of plug sparking across to tank space about $\frac{3}{8}$ inch causing engine to stop? (2.) When is the right time to try compression of engine, warm or cold? (3.) Is 4-1000 part of an inch too much in gap when fitting new rings? (4.) When turning new rings, how much larger have the rings to be left than the piston?—J.E.G.

(1.) When you are running fast the current is quite capable of jumping this distance. A cure would be to fit a rubber cover over the sparking plug terminal. (2.) You should try the compression after the engine has been running, when the oil has worked up on to the piston. (3.) The gap depends on size of cylinder, say 1-64th inch. (4.) The rings should be a good sliding fit in the cylinder.

A Sulphated Accumulator.

I should be much obliged if you could suggest a cure for an accumulator, the plates of which are slightly sulphated on the top?—H. A. RICHARDS.

To cure sulphating of accumulators sodium carbonate should be added to the acid. The proper proportion is about one ounce of carbonate to a gallon of acid solution. To bring accumulators to a good form again it might be advisable to discharge them through a lamp and charge them up again once or twice.

Difficulty in Starting.

I have a 3½ h.p. Rex, 1906 pattern, Longuemare carburetter, with which I have a great deal of trouble to start, even in mild weather. The contact breaker is adjusted all right, and so is the coil. The carburetter has just been thoroughly cleaned, and it gets plenty of petrol. Could you oblige me by giving a remedy for this trouble?—W.F.M.

The trouble is probably due to the carburetter receiving too much air at starting. If you fit a smaller sized air adapter around the jet, or some sort of shutter to exclude, or partially exclude, the air from underneath the jet at the moment of starting, the trouble would, we feel sure, be cured.

A Case of Overheating.

I have a 2¼ h.p. machine, date about 1906, with accumulator and trembler coil, gear 5½ to 1. My riding weight is twelve stones, and machine goes well on the level but heats considerably after a few miles and then fails on moderate hills, slowing down and stopping. I run with throttle nearly closed on level and extra air two-thirds open (F.N. carburetter). Cylinder is free from deposit and compression and firing good I give half a pumpful of oil about every six to eight miles, but do not find much oil in crank case after a run. Crank case does not appear to leak. Exhaust valve lifts about $\frac{3}{16}$in., and spring is strong. (1.) Do you think engine is doing well, and that my weight is somewhat against it? (2.) Should I improve matters by putting a smaller pulley on engine-shaft? Present one is 4in. outside diameter.—OVERHOT.

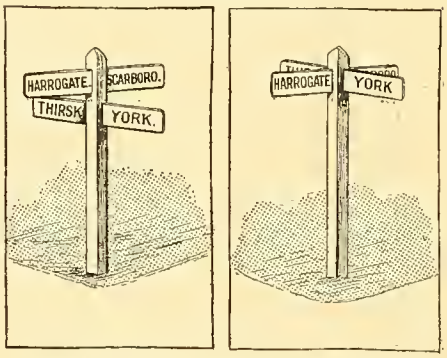
The gear would seem to us to be about right, although your weight is fairly heavy for so small an engine. Still, on level roads the engine should pull well without overheating. We should advise you to examine the exhaust valve cam and see if this is worn, as it appears to us that the exhaust valve should lift about ¼in., and failure to lift may be due to a worn cam or shortened exhaust valve stem. At present we should not recommend you to alter the gear but to verify the cams, as suggested. If alterations in this direction do not improve matters you might try lowering the gear.

Loss of Power.

I have a 2 h.p. De Dion engine in a New Hudson frame, and lately it has lacked power at slow speeds and on hills, although it still runs excellently when the speed can be maintained. The engine never overheats, carburetter is all right, and so is compression when tried on the stand. Is the trouble likely to be in (a) the lift, or (b) the spring strength of (i.) the exhaust valve or (ii.) the (automatic) inlet valve?—D. J. BOLTON.

The lift of exhaust valve is probably appreciably reduced by wear. The only remedy is to fit a new cam. A new spring would also doubtless improve matters considerably; also a new spring and cap for inlet valve. We should say that the exhaust valve spring has lost its temper, particularly if it has not been changed recently. Probably the inlet valve through wear now opens too much. That is why we recommend a new cap as well as the spring.

OUT OF DATE SIGN POSTS.



Until all finger posts are designed after the style of the one in the left-hand illustration, we propose to publish this illustration yearly. Why direction posts should ever be tolerated by County Councils in which the fingers obscure one another is beyond the comprehension of every common-sense road user.

Carburetter Obstruction.

I recently purchased a 1909 twin two-speed gear rated at 5½ h.p. with coach-built sidecar, but it does not seem to have power enough for even our best roads about N. Devon (Lynmouth district). It will not run for any distance without a stop, say, 200 yards, but occasionally it will take a spell and go for half a mile fairly well. The magneto seems to be working all right; one cannot detect any misfire when on the stand; it is quite easy to start, but will not pull well on the road. The carburetter seems to me at fault, for at times the engine will take, say, one-quarter opening extra air, but at other times it will take no air at all, will stop as soon as the air lever is opened the least, when taking no extra air; it works a little better with the main air partly closed off. The jet diameter is, as far as I can see, quite clear. Gauzes are all clean. Compression seems a little indifferent, especially in front cylinder, but I am looking to that. If there is anything you can suggest as the cause of my trouble I shall esteem it a favour.—P. J. KIMMINS.

There seems to be no doubt whatever that the trouble is in the carburetter or petrol pipe. There is evidently some obstruction in either the petrol pipe, jet, or one of the passages of the carburetter, otherwise the machine would never keep on stopping like this. Occasionally a particle of foreign matter gets into the tank and rests on the petrol orifice, partially obstructing the flow. If the engine is stopped as soon as the flow ceases, the object is washed away, and at the next time an attempt is made to start the engine runs well until the flow again makes the particle close the orifice. This seems to us to be the cause of your trouble.

Current Consumption.

Will you please tell me if you can help me in the following difficulty? My motor cycle is an old pattern, accumulator and trembler, make and break contact, and current consumption is rather high. I have recently had the contact blade and screw Jebronised, but it seems to make little difference. I have got a new dry battery, thinking my old accumulator was at fault, but it has not improved matters. I have also had all the wires off and examined them, and they all appear perfect. I may say that if I touch the blade and the brass portion of the contact breaker together with a piece of metal, such as a screwdriver, there seems an excellent spark.—H.S.

The trouble seems to be due to the fact that you have an extravagant coil, which consumes far too much current. This would absolutely preclude any chance of your using a dry battery. The only remedy is a good plain coil, using your make and break, when you could use a dry battery or accumulator as you thought fit. This would render the engine far more efficient than your present system.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"Carbonisk." Sheppey's or other decarbonisers.

"P.J.F." (Bolton). Wilkinson T.A.C. with sidecar attachment.

"Doubtful" (Birmingham). N.S.U. two-speed gear to 3½ h.p. engine.

"H.E.N.E." (Brockley). Millennium fit-all gear for 3½ h.p. single-cylinder machine and sidecar.

"G.H." (Grimsby). Fit-All gear or Mabon clutch and Whittle belt with Triumph and sidecar.

"J.E.J.G." We cannot see our way to reply to postcards. Our rules are quite clear.

If "Motor Cyclist" will send his name and address, also a stamped addressed envelope, we shall be happy to answer his queries respecting a 3½ h.p. Minerva and sidecar.

THE MOTOR CYCLE

Vol. 9. No. 415. Mar. 9th, 1911.

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1911 Competitions.

LAST week we were enabled to publish maps of the Spring Quarterly and Six Days' Trials, and the reader who studies these and the matter describing them will find that in severity the routes eclipse anything ever yet attempted. From a competitive standpoint this is inevitable, since as the motor cycle develops so must the tasks it has to perform in competition be made more and more difficult, otherwise the competition promoters would have great difficulty in separating the wheat from the chaff and making their awards.

Our readers and ourselves are well aware of the capabilities of the modern motor cycle, and even the man in the street now knows that the motor bicycle of the present day is no longer a toy but a reliable go-anywhere means of locomotion if—and it is, we fear, a big *if*—kept in proper tune.

The rider in any ordinary district in which exceptional hills do not exist is quite content with his mount. It climbs Westerham, Titsey, Sunrising, even Birdlip, without a murmur, but let him take a holiday in Devon or Scotland, and he will find his hopes disillusioned. Even in Yorkshire, that delightful county full of interest both historical and natural, he will find hills which will either call for a dismount or a change of gear ratio according to the type and power of the machine ridden. Probably quite fifty per cent. of the failures on hills may be traced to unfamiliarity, which is a severe handicap, as it devolves upon the machine entirely to pull its owner out of a difficulty. A variation of the levers on a corner badly taken often spells failure, and more often than not when the engine is called upon to correct the driver's error it will not respond.

Now this is what difficult trials will cure; place the course far enough away from the manufacturing centres to make previous practising practically prohibitive, and make the route difficult enough, and development in design will be effected.

The makers have their tasks set for 1911, and those who perform them successfully will reap a rich reward in 1912.

The Machine of the Future.

TO do what is required the two following items require consideration: first, gearing to render the machine capable of climbing anything and everything to be found in the Contour Road Book; secondly, a means of keeping the engine cool under all conditions.

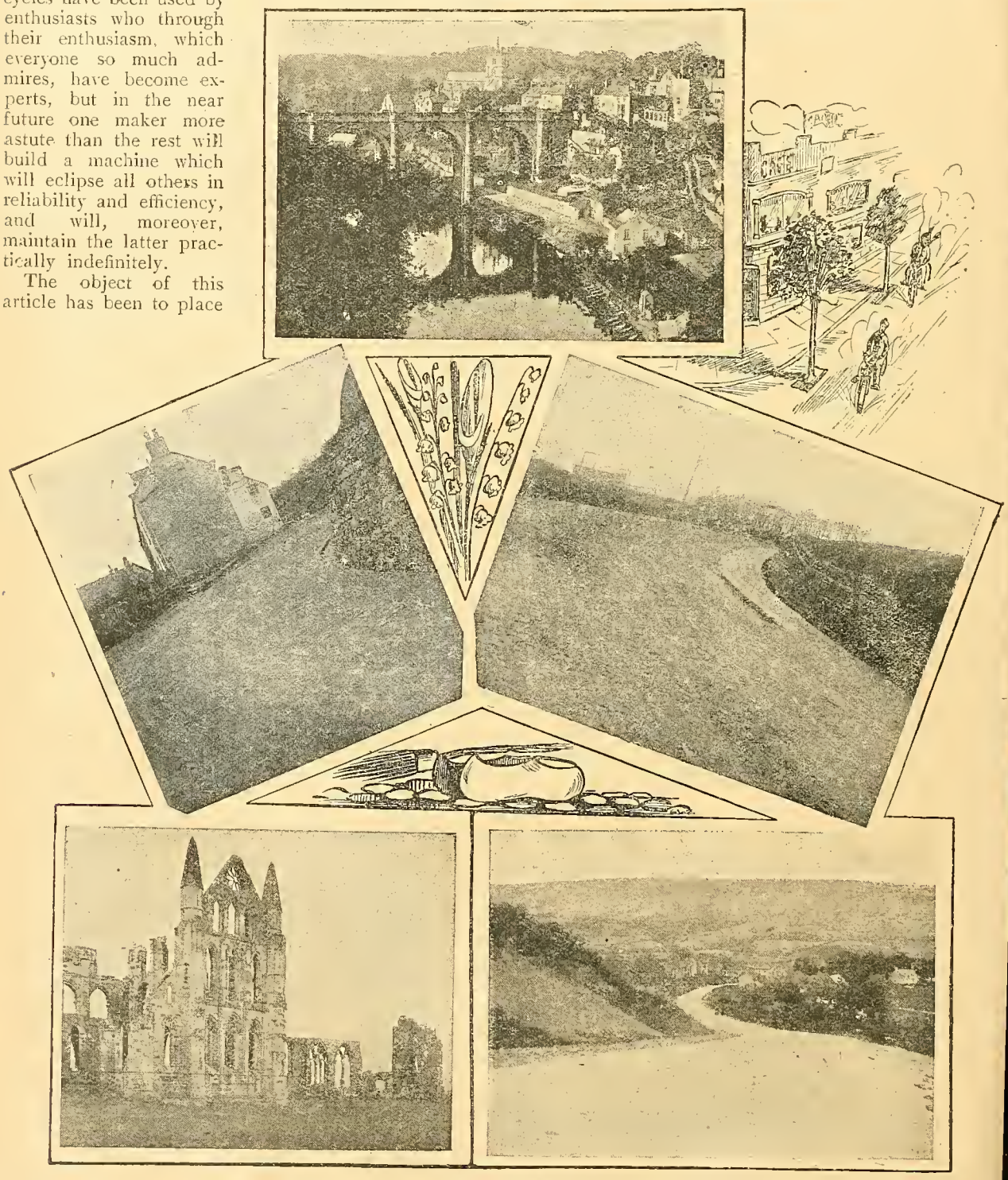
The machines in the Six Days' Trials will receive such a gruelling that even with careful driving carbon deposits will be heavy on the pistons and cylinder heads before the test is completed. Means must be found to prevent this. The need of cleaning out cylinders as frequently as every thousand miles must be abolished, and a solution of the difficulty must be found.

Not only have the two afore-mentioned trials been greatly increased in severity, but practically all other important competitions in like manner. Latest announcements make it practically certain that the Four-inch course will be used for the Tourist Trophy Race in the Isle of Man, and if this is so the machines as a whole will have to display better form than they have in the past. The ideal race would be for all the entrants to finish, but some, of course, to be faster than others. This is a wish which would mean a miracle to enable it to be fulfilled.

Only a limited number will finish; some will retire through mechanical breakdowns and some through inability to climb the mountain pass several times in succession through their engines overheating. Such a state of affairs should not be allowed to continue. Hitherto motor cycles have been used by enthusiasts who through their enthusiasm, which everyone so much admires, have become experts, but in the near future one maker more astute than the rest will build a machine which will eclipse all others in reliability and efficiency, and will, moreover, maintain the latter practically indefinitely.

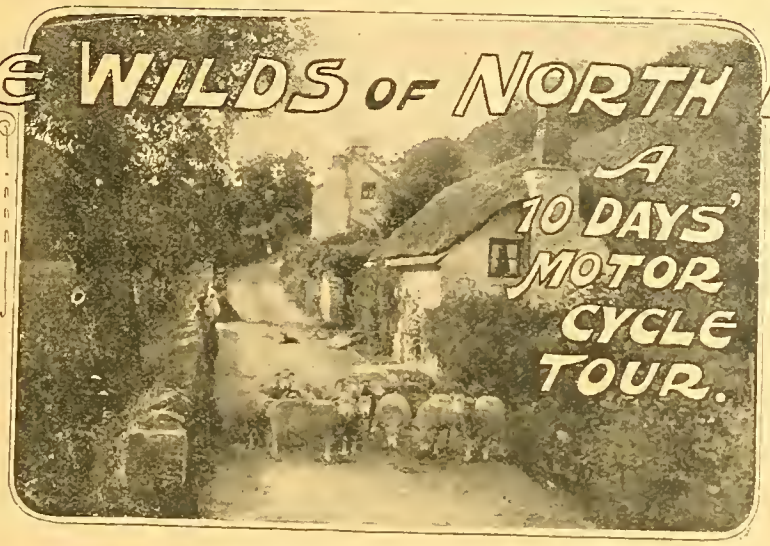
The object of this article has been to place clearly before all concerned what is expected of them. Truly, those who accomplish all that has been prepared in the way of competition during 1911 will ultimately benefit by their achievement; riders in experience gained and makers by increased business.

FURTHER VIEWS ON THE APRIL QUARTERLY TRIALS ROUTE.



(1.) Knaresborough. The first town after leaving Harrogate, on the banks of the Nidd.
(2.) One of the test hills. First bend of Lythe Bank, which rises from Sandsend. (3.) Continuation of Lythe Bank.
(4.) Picturesque ruins of Whitby Abbey. (5.) Blue Bank, near Whitby, from the summit of which a magnificent panoramic view is obtainable

IN THE WILDS OF NORTH DEVON.



The first instalment appeared in our last issue.

Starting out at 10 a.m., we made up Watersmeet Road for Simons Bath, a distance of about eight miles, six of which were on the low gear, and at one particular bit all dismounted.

Up this particular short rise, which was almost like climbing a tree, our power was a 3½ h.p. engine, plus two men, two farm boys, and a girl, and it was "all on" to reach the summit, where we found ourselves on the top of Exmoor Forest, really a treeless waste of moorland, with rugged and rocky hills extending to about 20,000 acres. Some of the views we obtained from the heights were not only wide but very beautiful, that up the west end of the Doone Valley from the second gate being delightful.

Across Exmoor to Bristol.

Across Exmoor we travelled along in fine style to the village of Exe, where the villagers turned out to see me climb the hill to Cutcombe, which my engine mounted nicely with me walking beside it. Another five miles and we were at Cutcombe, where we enter the Exe Valley; here wood and stream combine to make a picture of indescribable beauty. The road we traversed was fringed with countless varieties of fern, and the hills on each side were clothed in purple heather. A few miles of leisurely running brought us into Dunster, where the old arched and covered cloth market, standing in the centre of the street, immediately arrested attention. After some refreshment we left for Bridgwater, and there made another halt of an hour to inspect this sweet and clean town. This seaport, so-called, is on the River Parrett, fifteen miles from the open sea, and is famed as the site of the battle of Edgemoor, which was fought in 1685 about five miles to the east of the town, and was the last battle fought on English soil, and practically finished Monmouth's rebellion.

Crossing the Mendip Hills, we stayed the night at Cleeve, a pretty village some nine miles from Bristol, where we spent the evening playing cricket with the village team. It was noon ere we started the next day's ride, going *viâ* Ashton to Bristol. We climbed the tortuous hill leading to the Suspension Bridge, got a bird's eye view of the floating harbour, and away to the west the river between high hills. Over the Durdham Downs, a fine stretch of park land, we struck for the main road, which we touched at Filton. The next thirty-three miles (which we had traversed at our leisure on the outward journey) was a delightful run at a little over the limit through Patchway, Ridgway, Buckover, Stone, and Whitminster, to Gloucester.

The Cathedral Country.

After inspecting the cathedral, which possesses one of the largest bells and the most beautiful chimes in England, we once more took on the open road for Tewkesbury, but having left a waterproof cape at our halting place of the previous Sunday we deviated from the main road to Worcester and went *viâ* Haw Bridge, a most enjoyable saunter through real country lanes with excellent road surface. Nearing Haw Bridge my faithful steed showed signs of tiring and eventually fizzled out altogether; an examination showed that I was endeavouring to run on hot air, evidently so intent had I been on sight-seeing that I forgot to replenish the petrol at Gloucester, but a bulbful from my companion landed me to Tewkesbury, where both engine and man were provided with food and drink. The quaint old town is situated on the banks of the Severn, and after a glance at the old abbey we pushed on towards Worcester, the views of the Malvern Hills *en route* being very fine. Reaching Worcester in the early evening, the view of the cathedral as we approached the city was most impressive. Worcester made the third out of the four historic cathedrals of the Marshes—Gloucester, Worcester, and Hereford—that we had seen. These three, together with Chester, possess features of far-reaching interest, both from a historical and an antiquarian point of view. Here we spent the night, and started the next morning in threatening weather for Wolverhampton. Three times we donned and doffed our overalls, and then the weather cleared a little, but it flattered only to deceive, as we found out later. The road from Worcester to Wolverhampton is undulating, with a splendid surface, and we came along at a nice pace through Hartlebury, Kidderminster, and Withington, and climbed the slope to Wolverhampton.

An Impression of Wolverhampton.

Here after a diligent search, we found a garage to supply our engines' spirit needs, the day being Sunday.

Wolverhampton is on the edge of the "Black Country," and it seemed thronged with urchins of the gutter. Subsequently I found a possible reason for this, as enquiry for refreshment at different hotels on

in the Wilds of North Devon.—

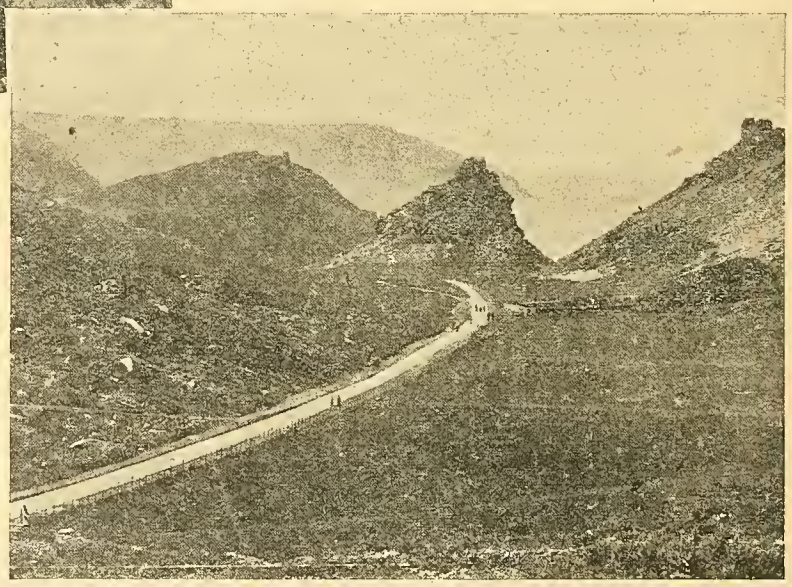
the borders of Wolverhampton elicited the same reply, which was tantamount to refusal, and in each case the place seemed to be swimming in beer. Never have I got a worse impression of a town than I did of Wolverhampton. However, at Cross Green we got a kind welcome and a Yorkshire smile from mine hostess, who hailed from Leeds. We were supplied with a first-class lunch in the Yorkshire style, and then sped along to Stoke, the scenery being very fine around the Trent Valley. From Stoke we decided to make for Derbyshire, *viâ* Leek, a route which gave a fairly good surface, with only average gradients, but nearing

The writer and his friend at Castle Rock, Lynton.

Blackshaw Moor we plunged down a terrific descent with a horrible curve, and then faced a precipitous hill on which I had to shed my passenger and eventually myself. It required all my breath, not to blow my "parritch" with, but to keep up with the motor as it pulled up the mountain side. At the summit we had reached an altitude of 1,500 feet. All around us were the Derbyshire moors.

Whilst we were crossing this wild moorland the wind came ravening from the south-west, and brought with it drenching rain. We stayed prisoners in a cart shed for an hour before the storm showed signs of clearing. Our request for tea at the Moorland Inn near by resulted in the discovery that the larder there was quite empty. We were, however, recommended to a house about half a mile away, which proved a harbour of refuge indeed. We left our mounts in the shed, and here they were destined to spend the night as events turned out. The house stood right away from the hillside, a mile to the east of the village of Flash, and whilst we had tea the hillsides and moorland were enveloped in a fog, which obscured everything, and for two hours clung persistently to the moors, the rain meanwhile coming down in torrents. It was obviously impossible to turn out in such weather, and the good people bade us make ourselves at home, and at some inconvenience they decided to find us sleeping accommodation for the night. The rain continued apparently till next morning, for when we awoke things were much the same, and this being our last day of leave it looked as if we were in for a soaking on our final day, but happily about ten o'clock the clouds lifted, and, starting in sunshine, we tumbled down Axe Edge into Buxton.

The route now lay along some of the loveliest dales in Derbyshire, and leaving Buxton, the classic inland watering place, we traversed the beautiful Ashwood Dale, and along Wye Dale up to Topley Pike, about 1,200 feet high. A five mile fall took us *viâ* Millers' Dale to Monsal Dale, the scenery being most entrancing all the way to Ashford, thence to Bakewell, and *viâ* Birchell Lodge to Baslow, where a stiff four miles climb landed us at Owler Bar, on the grouse moors once again. After eight miles of easy going through Abbey Dale and busy Sheffield, with its filthy tramlines and bad setts, we struck the Penistone Road, and had a good climb of about four miles to Wortley for our final lunch. The country hereabouts is very



The Valley of Rocks, Lynton.

bleak and open. The concluding stages of our journey through Ingbirchworth, Park Head, Huddersfield, and the familiar road to Batley and home need no comment.

Impressions of the Tour.

Doubtless many readers are curious as to the running expenses of a trip which covered 680 miles from start to finish. Eight and a half gallons of petrol were consumed, which works out at about 80 miles to the gallon. These are actual figures, and, considering the combined weight of the driver and passenger—21 stones—the 80 lbs. of luggage, and then the terrors on the Devon coast, and the several

In the Wilds of North Devon.—

acclivities which necessitated shedding both passenger and driver, the consumption may be said to have been very reasonable. A quart and a half of oil sufficed for the engine—the excessive use of this is explained by a lot of low gear work which called for extra oil to be safe—so that the total cost of petrol and oil works out at less than a farthing per mile, ignoring, of course, the wear and tear which would obtain on any kind of vehicle. In the whole of our wanderings there was not one mechanical stoppage. Each morning the machines started with the first push, and all we needed to attend to was the petrol supply. Puncture trouble was not at all severe, the total for both machines being three. My mount was a 3½ h.p. Phelon and Moore, 1910, fitted with two-speed gear, 5 to 1 and 9 to 1, Kempshall tyres, which had previously carried me over 3,000 miles without a puncture. The driving tyre was extra heavy 26 by 2¼, and the steerer anti-skid 26 by 2¼; sidecar Mills-Fulford radial castor wheel, which makes steering either to the right or left a very simple and easy operation, and undoubtedly the method of springing adds to the comfort of the passenger. The solo mount which accompanied me was a 3½ h.p. Triumph free engine model, and this machine with its expert rider astride climbed the fearful Porlock Hill.

Malvern, Worcestershire Beacon, and Hill Path. Unfortunately, motor vehicles are not allowed on this path.

Homeward bound. Penistone Moor, near Sheffield.

General Observations.

It will be noticed that mileages from place to place are seldom mentioned, for the simple reason that I do not tour by my odometer but by scenery. In my cycling days I seldom took heed of distances, in the sense of mapping out a certain mileage to be covered, and with the motor, where ten or twenty miles are of little moment, I ignore them altogether. It is not to one's enjoyment even on a motor to set out to reach a specified place in a specified time, let your motor rip along as you dare, where the surroundings are dull and uninteresting, but where scenery abounds and splendid views are to be obtained stop the engine and stay awhile to enjoy them to the full.

Of course I do not mean by this that a tour should be begun without any plan whatever; always have a motive in view, as without it a tour would be a humdrum sort of enjoyment. To neglect carefully to plan a tour and know beforehand something of interest of the places to be visited leaves the tourist merely a wayfarer and at the mercy of caprice and circumstance. It has been said that one-half of the enjoyment of a holiday consists in the anticipation thereof. Realisation does not always come up to anticipation, but there is a fascination in arranging the details of a tour and the points to be observed *en route*. On this trip three of Bartholomew's ordnance survey maps covered the districts I wished to traverse, and these are preferable to route books, which are very good, but they do not give the topographical information conveyed by a good map. From a map the tourist knows his exact whereabouts and his geographical situation, and this adds much interest to the seasoned tourist. I was doubly grateful to the ordnance map, in that it showed a way out of Lynmouth (avoiding the payment of 7s. 6d. for my turnout to be hauled out of the village by the cliff railway) across Exmoor Forest, a road not marked in any way in Gall and Inglis's Contour Book, but quite passable all the same, as we got across with all our impedimenta. Possibly the reason this route is not given is that the cyclist would keep to the coast road and could, of course, walk up either Lynton Hill or

In the Wilds of North Devon.—

Countisbury Hill, but to the motor cyclist, who would have to push his little bot up these hills, it is impossible.

Resting Places.

In our pilgrimage we stayed at seven different houses and were only fleeced once. After avoiding two pretentious looking places, at the finish we got bitten, but that hotel is marked in my notebook with a big black mark. Our next venture was just as good and reasonable as our first was outrageous. It is, of course, difficult to know from a superficial survey whether a place is a desirable haven for a night's rest or not, though after a fair experience of touring one acquires a certain intuitive sense of judging these places. Of temperance hotels I regret to say my experience has been bitter, the majority having not the least idea of catering for the tourist. In judging your stopping places one word of advice: beware of the manageress who is given to excess in jewellery and exotic hair. Vivid remembrances of this type compel me to issue this warning.

To the cyclist or motorist it may at once be admitted that Devon is not an ideal country. Neither the surface of the roads nor the gradients of the hills admits of the hasty rush beloved by the scorching fraternity. On the other hand, the genuine tourist will find the attractions so numerous and so irresistible that the longest holiday will be all too short, and he will leave the land of junket and cream with a fixed determination to return again at some future time.

Anyone who has never tasted the joys of the open road has yet to live—the road with its freedom, freedom from conventionality, freedom from stiffness and starch, freedom from the claims of city fashion and seaside parade; it is indeed the only place where a man feels he is his real self, where he can throw aside all make-believe and appreciate all that is best within him. Go out with a fancied wrong, or sick at heart, and the new surroundings, with the tonic of the air, enable you to forget sorrows, cares, and failures. The railway train for a holiday! Pshaw! It is prison compared with the joys of the open road.

STABILITY.

THERE seems to be a great deal of misconception on this interesting subject. Mr. Leechman compares the balancing of a motor cycle to the balancing of a broom or billiard cue, and rightly points out that this is much easier to do when the greater weight is at the top. The reason for this is not—as "C.L.W." supposes—due in any way to the action of the air upon the length of the shaft, but is as follows:

If the hand could be kept in exactly the right position and there were no other disturbing influences the broom would stand up without any movement, and would, in fact, be in a state of unstable equilibrium. This condition is unattainable in practice, and the centre of gravity is constantly changing its position, rendering a compensating movement of the hand necessary.

Now the human hand is prone to error—*humanum est errare*—and a small error will entirely upset the equilibrium if the centre of gravity be low. For example, take a centre of gravity four inches above the hand, then a movement of two inches at the hand will incline the rod at an angle of 30° and "over goes the show," but if the centre of gravity were four feet above the hand, this angle, with the same movement, would be only 2½°, which would cause the rod to commence to fall but slowly and would give ample time for the effect to be counteracted.

Tyres and their Effects on Skidding.

The old high bicycle was very free from side-slip, partly for this reason perhaps, but, in my opinion, it was largely a matter of tyres—the solid tyres of those days cut through the mud better than pneumatics.

I quite agree with Mr. Leechman's inference from dumb-bells and his remarks on flywheel effect until I come to his last paragraph; there he says that the same benefit would be obtained by fixing the engine at an equal distance above the top tube This is wrong, for it would result only in raising the centre of gravity to some point above the top tube and would decrease the inertia of the base of the machine.

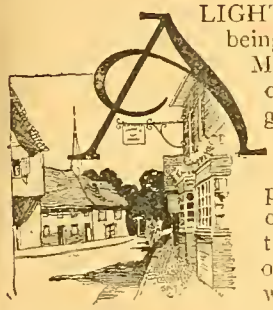
Up to the present we have considered only the regaining of balance when side-slip occurs, and have shown that this is easier when the centre of gravity is high. We now come to the more important question of preventing side-slip, and for this purpose it is best to keep the weight low down. Here theory and practice are agreed. It is simply a matter of inertia; road friction and non-slipping treads come largely into the whole matter of side-slip, but do not affect the particular point I am now discussing. We have a body of moderate weight moving at a fair speed; the wheel strikes a rut or something on the road, which tends to force it sideways, and this it is much more likely to do if the weight is so placed that the wheel can slip without much displacement of the weight (or mass). A heavy weight on a perfectly smooth surface can be moved by an infinitely small force, but the move will be gradual—the inertia of the mass offers considerable resistance to any suddenly applied force; this is the reason for the advantage of low-built machines. Also side-slips of this kind are less likely to occur when the pace is high, as the momentum, and consequently the inertia, is greater, but, on the other hand, the result may be more disastrous. I do not, however, agree with "C.L.W." "that the centre of gravity of machine and rider should be as near its centre of suspension as possible."

A Question of Compromise.

The conclusion of the whole matter is that to prevent a machine being forced to slip by inequalities of the road a low-built machine is best, but if a slip of a certain amount does occur balance is more easily regained if the centre of gravity is not too low. The question is one of compromise. On a smooth but slippery road I do not think there is much to choose, nor is there any difference in turning corners—the angle of inclination depends not upon the height of the centre of gravity but upon the weight and pace. So that each wheel may get a good grip of the road the weight should be fairly central.

AURIGA.

THE TURNER RUNABOUT.

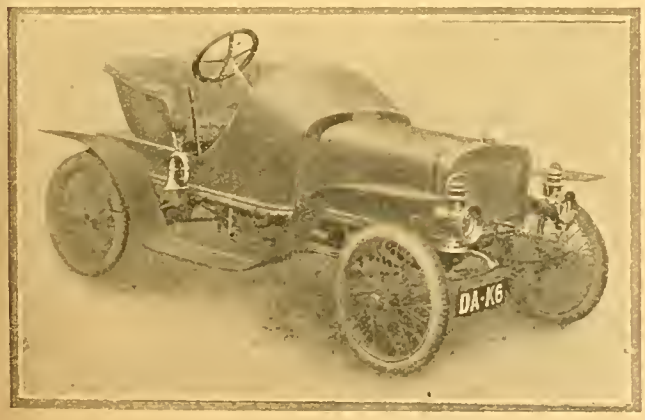


A LIGHT four-wheeled runabout is being made by the Turner's Motor Manufacturing Company, of Wolverhampton, and is a good illustration of our contention that a four-wheeler with any pretensions to completeness has very little in its construction to connect it with the motor cycle. Indeed, the only excuse for connecting it with motor cycling is that it has an air-cooled engine and wire wheels. We are not saying this with any idea of disparaging runabouts, but by way of indicating how difficult it is to find the line of demarcation between the motor cycle and the motor car.

The Fan-cooled Engine.

Power is derived from a 9 h.p. J.A.P. engine, 85 mm. bore by 95 mm. stroke, mounted under a bonnet which, for the sake of appearances is furnished with a sham radiator consisting of a pierced metal screen. Behind this screen are two large funnel-shaped nozzles which direct the current of air directly on to the cylinder heads. Between the engine and the dashboard proper is fixed a dummy dashboard, hidden under the bonnet, and in this is mounted a large fan of special design which induces a very strong draught past the cylinders and discharges into a semi-circular box open at its bottom. The fan is a very powerful affair indeed, having a diameter of close on 1ft. 6in. and is fitted with double blades. It is driven at slightly over engine speed by means of a round leather belt.

Directly behind the engine is a gear box giving two forward speeds and a reverse and constructed upon rather novel lines. A prolongation of the engine-shaft forms the primary gearshaft, alongside of which lies the secondary gearshaft through which the drive is taken to the back axle, and is, therefore, indirect on all gears. The primary-shaft carries three pinions integral with it and these mesh with three larger pinions on the secondary-shaft which run idly upon it, but can be locked to it one at a time by means of expanding metal-to-metal clutches actuated by a specially profiled rod passing through the middle of the primary-shaft. For the reverse an intermediate pinion is introduced between the pinions on the primary and secondary-shafts. A means is provided whereby the clutches can be adjusted from the outside.



The 9 h.p. air-cooled Turner runabout weighing complete, 6 cwts.

Worm-driven Back Axle.

The two forward speeds—and, of course, also the clutch manipulation—are controlled by a side lever, which has its neutral position (all clutches disengaged) between the low and high gear positions. The reverse is operated by a pedal, and forms an emergency brake.

Transmission is by a long propeller-shaft to the worm-driven live axle, which is fitted with the simplest possible form of differential, and rotating outer sleeves on which the road wheels are free to revolve whilst being actually driven by internal shafts terminating in dog clutches.

System of inducing a very strong draught past the cylinders.

Half-elliptic springs are used to the tubular front axle, and quarter-elliptics to the back. The latter springs terminate in boxes carrying ball bearings in which run the axle sleeves and to which short radius rods are also pivoted.

Internal expanding metal-to-metal brakes are fitted to the rear wheel hubs, and these are actuated by a pedal, as is also the throttle.

The body and dashboard are of pressed steel, nicely upholstered, and the latter embodies the petrol and oil tanks, lubrication being on the J.A.P. drip feed principle. The chassis is pressed steel. Ignition is by coil and accumulator, though a magneto can be fitted as an extra. 26in. by 2½in. tyres are fitted, and the vehicle, with a wheelbase of 6ft. 9in., wheel track of 4ft., overall length of 8ft. 6in., and width of 4ft. 6in., weighs complete 6 cwts.

We had an enjoyable little spin on the Turner runabout, during which it showed a surprising turn of speed—35 m.p.h. at least—and an ability to tackle almost any hill on top. It was quite comfortable as far as seating was concerned, but was by no means as quiet as it might have been, though admittedly the first experimental machine and one that had had a good deal of knocking about.

M.C.C. Eighth Team Trial.

Suggestions Invited.

IN the following article Mr. J. Van Hooydonk, the organising secretary of the trial, reviews the past competitions, and gives particulars of some of the more recent suggestions which have been sent to him for improving the event. He also invites clubs who intend competing to forward him suggestions for furthering the popularity of the trial.

As is well-known, the above competition has become one of the principal annual events, last year's competition comprising no less than eighteen teams from all parts of the country. So far, the competition has been run on the same lines as the first of the series, *i.e.*, 100 miles non-stop run, the aggregate scores of the riders of a team deciding the winners, and for several years no team succeeded in making a full score.

However, as machines improved, reaching a stage not far removed from perfection, my committee realised that in the event of one or more teams scoring full marks, as regards completing the distance, some other factor should be introduced to determine the winner, and after considering the question from every point of view, riding to schedule time, *i.e.*, the skill of the riders, was decided upon as the most satisfactory.

Last year three clubs, the Coventry and Warwickshire M.C., Bristol B.M.C., and the Northampton M.C.C., each had a full team of six completing the full 100 miles without a single stop. The Coventry Club, however, rode nearest to schedule time, and so won *The Motor Cycle* cup.

Various Suggestions for Improvement.

Although the trial has proved to be a successful and enjoyable function, naturally suggestions for improvement offer themselves. In general the competition is considered as too easy, now that it has been proved that three teams can make a full score, and to make it more difficult the inclusion of one or more stiff hills has been suggested.

We must not, however, forget that to do this would give an advantage to the higher powered machines, and it is not desirable to run two different systems of markings in this respect—the competition being primarily for reliability and regularity of running. Riding a full 100 miles without a stop has been described as too long to be in the saddle, say, 5½ hours. In the early competitions an hour interval at half distance was allowed for lunch. Sorry as I am to state it, this led to abuse, and although any number of officials kept a watchful eye on the machines to prevent tampering, there were cases of machines being taken out of sight on the plea that instructions were not understood.

Riding to schedule time is objected to by some as being too irksome. True, it is not a nice job to keep an eye on the watch and another on the milestones, but then something must determine the winning team. The Coventry Club has sent in a suggestion that no watches or speedometers should be allowed. To this I can see the objection that a team can have a man or men on the road to keep the competitors posted by signs or otherwise of the time and distance—this may be prohibited, but the difficulty is to check any infraction of such a rule, and to my mind a rule that cannot easily be enforced is useless. If watches and speedometers are objectionable, I think the best way to give all riders an equal chance would be to send them over, to them, an unknown course of an unknown distance, giving them an average time per mile to cover the course, the distance being known to the timekeeper only. This system was adopted in one of the Motor Cycling Club's speed-judging competitions and proved very satisfactory. Course and distance being unknown, judgment alone can inform the rider of his progress.

Petrol consumption has been suggested as a means of arriving at the winner. To empty and refill tanks and measure the petrol of, say, 150 machines and to do it correctly is, in my opinion, too big a job to attempt in a single day's play, for play it is to the competitors and officials alike, a fact which must not be lost sight of.

A Circular or Straightaway Course.

One more objection, and that is to the hitherto circular course of twenty-five miles being covered four times. Riders would, perhaps, prefer to go straight out and home—the ride would prove more interesting, and maybe some good scenery could be enjoyed. There is much in this; at the same time I think that for once the riders, who after all see a good deal of scenery in their year's riding, may well, as it were, sacrifice themselves and ride for the honour of the club and for that purpose only. Further, the large number of willing helpers like to see something of the fun, and it is by watching the competitors pass and repass the timekeeper that spectators know how the teams are shaping.

Last year, after all the competitors were started at half-minute intervals, the first man returned within a few minutes after completing the first circuit. A large number of spectators were present at the starting point, and any number of motor cyclists on the course watched the teams on their journey, and assisted in reporting the men who fell out and the distances covered.

On a straightaway course it would be extremely difficult to ascertain the exact spot where a man may stop while many more officials on the route would be necessary, and as for interest nothing would be known until the finish of the competition

Should Pedalling Chains be Removed?

In my opinion the inter-club team trial should be looked upon as a day's sport and nothing more. We cannot ask club riders always to compete with the latest patterns or very powerful machines, nor can we ask them to mutilate their machine, the suggestion having been made that pedalling chains should be removed.

We want to make the event so that any motor cyclist with any type of machine that is reliable can compete, and the crux of the whole matter is that a team of six riders of one club shall, as a body, ride 100 miles to a uniform set speed. So far every one of the team trials have been run without a hitch. The whole of the labour in organising and running the trial is honorary, and the day has hitherto been looked upon as a holiday by competitors, officials, and local residents alike. Riders from North, South, East, and West meet each other in friendly rivalry, which in itself adds much to the enjoyment of all. Daventry has, of late years, been chosen as the starting place. Being central it equalises the distance the competing teams have to travel, the roads are good, and the very great help that we receive from the police will be difficult to equal in any other locality.

The M.C.C. Committee has again honoured me by entrusting me with the organisation of this year's team trial.

I have set out, as far as possible, the pros and cons. of any alteration in the way the competition has hitherto been run. All that my committee wish is that this year's team trial shall, if possible, surpass those of previous years.

Should any club wishing to enter a team have any suggestions to offer, bearing in mind the above remarks, we shall give them our utmost consideration, the wish of the officials and competitors alike being simple rules that can be enforced, and that are fair to all. Letters should be addressed to me at Spring Villa, High Road, North Finchley, N.

J. VAN HOOYDONK.

LEADING MOTOR CYCLE CLUBS

Robson Crosier, chairman of directors.

Ernest Hawkins, secretary.

No. 8.—THE NEWCASTLE AND DISTRICT MOTOR CLUB, Ltd.

THE Newcastle and District Motor Club, Ltd., was formed on the 30th March, 1906, and was then styled the Newcastle and District Motor Cycle Club. At the inaugural meeting twenty-two members were enrolled, and by the end of that year this number had been increased to sixty; at the end of 1907 the number had grown to ninety-one, and at the end of 1908 to 104, but after central headquarters had been taken there was a much greater influx of new members, and there are now over 300 names on the club register. The great need in the North for suitable headquarters was the subject of very serious deliberation by the officers of the club, and ultimately it was thought best to form a limited company and take headquarters in the centre of the town.

A large house was rented and fitted out as a first-class manner complete with smoke, dining, sitting, card, billiard rooms, etc. The club is affiliated to the North-Eastern Automobile Association, and through it to the A.C.U., R.A.C., and other governing bodies, and a scheme of social amalgamation has just been carried through whereby members of the N.E.A.A. and other motor cycle clubs affiliated to them residing outside a radius of ten miles from Newcastle have full use of the club premises from a social standpoint, but they are not eligible to take part in competitions. This scheme has proved very successful.

The club has been instrumental in organising several new forms of competitions, and until 1910 it was the only provincial motor cycle club holding an event lasting longer than one day. The Newcastle-Stranraer and back reliability trial has been held for four years. This club was instrumental in obtaining permission to hold the A.C.U. hill-climb at Sutton Bank, and previous to last year the arrangement and holding of this hill-climb, with the exception of the timing, had been carried out by the members.

Since 1906 the club has helped the M.C.C. in the London to Edinburgh Run, and last year parked the machines on its premises during the luncheon interval and prepared and served 146 luncheons for the competitors.

The lecture room is large enough for whist drives and events of this nature, and there is a well-lighted and commodious garage at the back of the club premises capable of holding from 150 to 200 motor cycles.

Reading and writing room.

Front view of club premises from Savile Place.

Billiard room.

Cards and games room.

Occasional Comment

Flaws in Existing Rear Springing Methods.

One serious defect exists in many of the best existent devices. It is obviously of little value to spring the rider's trunk, if his feet are carried on uninsulated rests, which communicate unpleasant vibrations to the trunk. As little Tommy said with genuine logic, if he really had to have the cane, he didn't particularly care whether he had it on the extremities or on the equator.

But if the footrests are slung directly under the same carrier as the saddle springs, they come too close up to suit tall riders, whereas if they are set in a more forward position, the springing device generally ends by being cumbrous, complicated, costly, and ugly. But it is not difficult to escape this dilemma. The footrests will serve if they are "floating," whether sprung or not. They may be sprung separately, or they may be simply hung, so that some slight movement up and down, to and fro, is possible.

Another solution is to employ quite lively metallic springing of a simple character, and brake it by the sort of device known on cars as a "shock absorber." This is the secret of the marked efficiency of the Truffault fork, and I believe the principle has yet to be applied to the rear springing of a motor cycle.

One friend of mine uses a very simple device, by which he swears. His saddle pin consists of a solid steel L, fitting loosely into the hollow seat tube. At the bottom of the tube is a long, strong spring. Two straps from the saddle frame to the frame of the machine restrict the action, and a double hook spring from the saddle peak to a frame clip keeps the saddle facing roughly in the right direction. The plan is a trifle crude, but he says it works well on his rough country roads.

One Big or Many Small Jets?

Many readers are interested in the advice of a well-known competition rider in favour of sealing the end of a standard jet, and making an "X" cut in it, or drilling several tiny orifices, in lieu of boring out the original hole, when an extra heavy flow of petrol is desired. The value of many wee holes, or of a very narrow cross cut X, as opposed to a single big aperture, is that the suction is thereby enabled to break up the petrol properly, and a real "spray" is secured, as against a solid fountain of spirit. The mixture is then more homogeneous. This principle explains the efficiency of the old Longuemare with the "rose" jet, an efficiency which was often marred by wear on throttle and air sleeves when they began to wear loose. The jet was most inaccessible, and its inaccessibility was more noticeable because it frequently needed removing, as the hair-fine holes rapidly become silted up with dirt. When it choked we had to undo several screws in the lid of the mixture chamber and unscrew the jet with a small key such as fits the need of the domestic clock. But we used it for years, because of the efficiency of its jet stream.

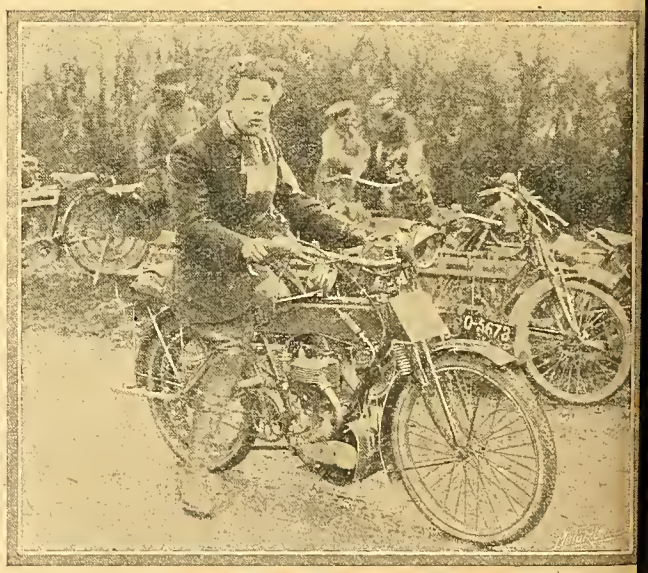
Nowadays jets are truly accessible—a small spanner or a twist of the fingers, and lo, they jump out into the palm of your hand! This being so, I should like to see a return to the rose jet, or other modification, incorporating the multiple orifice. With regard to single hole jets, it does not pay to push a wire through these holes too often, for the softest wire is apt to enlarge them when you only wish to clean them; however, jets are cheap, and there is no hardship in carrying a spare.

Hydraulic Rear Springing.

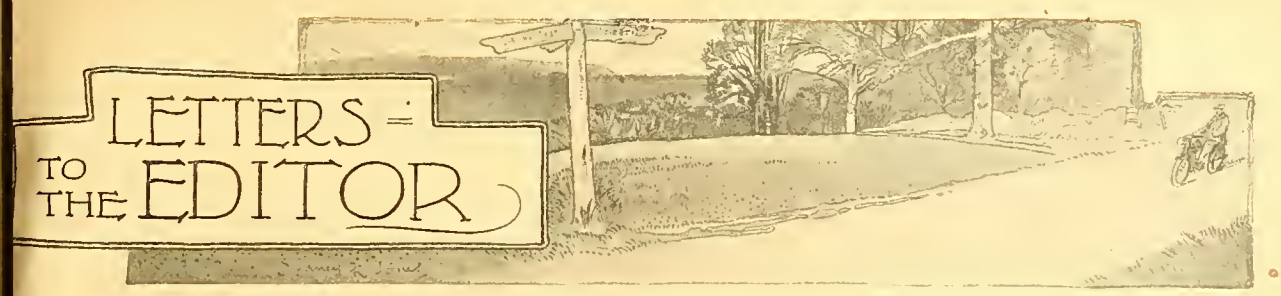
Nobody seems to have seriously experimented with a hydraulic rear springing device, though I have seen the idea applied to automatic pulleys with fair success. The notion is that the saddle is mounted on a piston, which works in a cylinder partly filled with oil, or other viscous liquid. From the base of this cylinder a tube of narrow bore communicates with another cylinder, and the bounce is softened by the squeezing of the liquid through the narrow tube.

One of two points is essential to the working of such a device. Some means must be adopted to cause a return action. If a really compressible liquid be employed, the device *per se* will provide sufficient elasticity. Otherwise the return action must be secured by a mechanical device, such as a spring piston in the base of the second cylinder.

Offhand I should say it should be fairly easy to avoid leakage, but the packing of the joints is obviously the prime difficulty.



A MOTOR CYCLE WITHOUT A NAME.
This machine, which has a 3½ h.p. Precision engine, was ridden by J. W. Woodhouse in the Midland Reliability Trial on the 25th ult. The tank is specially strengthened and takes the place of the usual top tube, being electrically welded to the fore and aft portions of the frame.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address

A Suggested Motor Cycle Show in the North.

[5439.]—A few friends and myself visited the Manchester otor Show expecting to see a show of motor cycles, but re astonished not to find a single one. Is there to be a tor cycle show in Manchester? If not, I feel sure it is great mistake. There are thousands of motor cyclists in North who had not the time to attend the Olympia Show who would find time to go to Manchester again. If it s motor car manufacturers to have an exhibition in the rth, then why not motor cycles?

C. B. ROBINSON.

Nitro-glycerine as a Motive Power.

[5440.]—I note with interest the introduction of nitro-cerine as a motive power for motor cycles.

was not altogether surprised, as I myself have recently de some investigation as to the application of explosives this family as a motive power. It would no doubt be interest to many readers as well as myself to know how new motive power is effected, and if it is simpler. aper, and as reliable and safe as petrol.

Nitro-glycerine from its name denotes one of the nitrogen pounds, and with the decomposition of nitro-glycerine of the compounds evolved will belong to the oxides nitrogen, probably nitric acid. Now if the explosion es place in a cylinder of an engine, as will probably be case, I am curious to know the action of the decomposed ro-glycerine on the cylinder and piston.

No doubt the gentleman who has carried on these experi-nts so successfully will give particulars and results in the r future; in any case I should be pleased to communicate h him respecting this interesting subject.

W. F. ROBERTS.

Handicappers in Motor Cycle Races.

[5441.]—At the annual general meeting of the Scottish clists' Union, held at Dundee on the 25th ult., I had a tion on the agenda, "That no person engaged in the motor le trade be appointed judge or handicapper for motor le competitions." This was met by a recommendation by Motor Cycle Committee, "That no alteration be made in present method of appointing judges or dicappers for motor cycle competitions."

read communications from the secretaries of two West of Scotland M.C.C.'s, namely, M.C.C. and Glasgow M.C.C., approving my motion, and also stated that leading ttish motor cyclists had in private conversa-n with me condemned the present state of airs and earnestly desired the change. That R.A.C., S.A.A., A.C.U., etc., had already pted this motion. That it implied no stigma the trade. That the principle involved was ilar to that of one of His Majesty's judges ving the bench when faced with a case ich involved his personal interest in the htest degree. That although a Cabinet nister might not tender for a Government con-t it did not mean that he could not do so estly, etc. That we motor cyclists came cap nand to make the request, etc.

here was practically no reply, and no notice was taken of other bodies' decisions on the point. Result—Committee voted five for the amendment and four for my motion.

JAMES S. GRANT.

A Week-end on a Two-speed Douglas.

[5442.]—I am interested to see, in your description of the 360 mile run on the two-speed and clutch model Douglas, that the fitting of the clutch pedal and brake pedal both at one side has been, rightly, criticised by you, and that you suggest transferring the clutch pedal to the opposite side. As this would mean redesigning the gear box, however, I think a simpler plan would be to curve the brake rod round just ahead of the engine flywheel, and carry it under the front cylinder across to the opposite side. Then the brake would be worked by the right foot and the clutch pedal by the left. I am sure the makers will see their way to effect this trivial and inexpensive alteration, which will result in an immense improvement in the manipulation in traffic of what is, otherwise, a splendid machine.

Referring to the carburetter jet: cannot this be cleared out, if required, with a fine wire by the removal of a screw in the base?

OILE.

[A stiff fine wire will no doubt clear the jet, but it adds another spare to the toolbag.—ED.]

Fitting Extra Silencer Pipes.

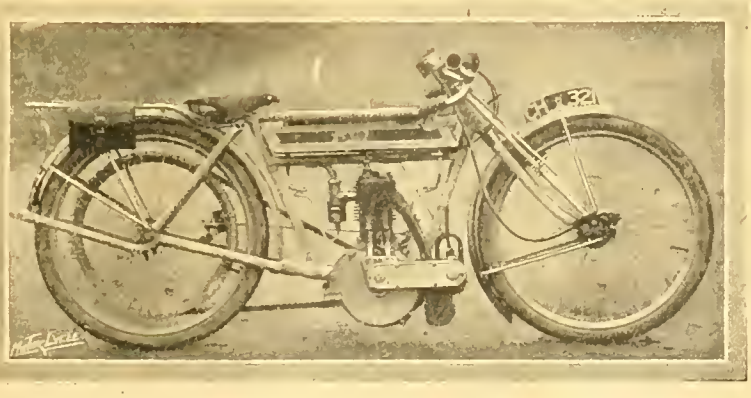
[5443.]—I fitted to my 1910 Triumph a long piece of 1¼in. weldless steel cycle tube from the centre of the original silencer to near the right side of the back tyre. The end of the tube was pressed flat, and no second chamber was found necessary. Result, I found the engine kept cooler and ran longer at full speed without tiring, and was fairly quiet. The experiment was inexpensive and quite worth doing.

CYLENGTHS.

A Rakish Looking T.T. Mount.

[5444.]—I send you a photograph of my new T.T. Brough, the saddle of which is only 26in. from the ground, and, owing to the great rake of the steering it is possible to ride it round corners at a fast rate. A great advantage of this machine is that it is nearly impossible for it to skid.

J. W. COX.



A very low built T.T. Brough, built for J. W. Cox, treasurer of Cambridge University M.C.C.

Reflex Rear Lights. Tyres and Sideslip.

[5445.]—As a user of the Reflex rear light, I was pleased that you published extracts of the report issued by the Technical Committee of the R.A.C. on such lights.

I have both my machines fitted, the reflector being fixed in the back number plate (such plates numbered, and lettered, with reflector, can be obtained complete from a Coventry firm). I adopted the reflector not from any apprehension of being overtaken by horse-drawn traffic, but as a warning and indication to the usually fast driven car that, coming up behind, might, if not warned, occasion a rear collision. I certainly hold the opinion that all vehicles at present exempt from carrying a rear light should be compelled to have one or more red reflectors as a safeguard to themselves, and an indication to others. Push bicycles in particular, as they are difficult to discern ahead after night on dark roads. Mr. Chas. S. Lake's letter [No. 5393] on tyres and side-slip is very interesting, and I congratulate him on having found a tyre free from skidding propensities under most trying conditions. Would Mr. Lake kindly state what pattern of tread the cover had, that he found so satisfactory? as I note by the Kempshall Co.'s advertisement that they give a choice of two or three patterns. A really effective non-skid tyre for heavy and lightweight machines is what I have been looking for, but have not found either by experiment or report. R. G. LINDSAY.

Rear Springing Devices.

[5446.]—In the year 1906-7 the writer made some experiments with rear wheel springing devices as well as with the front wheel springs, and the most satisfactory results obtained for front wheel springing was with the axle trailing behind the front fork ends, while the rear wheel springing, which allowed of no side play or whippiness, was with an auxiliary fork playing between and pivoting between the rigid frame forks as shown in the accompanying illustration. Much lighter frame tubing is permissible when both wheels are well sprung, and especially if a duplex frame design is employed with joints and crossovers welded by the oxy-acetylene process. No. 20 gauge D tubing may be safely employed in the case of a 2 h.p. engine of good design.

In January, 1910, my 1908 Triumph was operated upon, and when it came out of the hospital it looked like the accompanying photograph. A 1½in. × ⅛in. iron strap is bent to form an auxiliary fork and holes bored to lighten the weight.

The wheel axle fits in the ends of this fork, and rests on ball bearing pivoting pins clamped or welded to the back stays. The crotch of the fork rests upon helical springs. and an A.S.L. air-spring is interposed between the steel springs.

Having ridden this same machine two years without and one with rear springing, I may say that engine vibration is not more noticeable with rear wheel springing, but if supplementary springs are fitted to the front wheel then the vibration of the engine is very noticeable.

With my rear wheel springing device the sensation is much the same as when riding with a partially deflated tyre, only that the expected bump down on to the ri never comes.

When taking a passenger upon the rear carrier the a spring is given about one pumpful of air to resist the add weight, and the springing can be regulated to a nicety.

When using the machine for business journeys r samples were badly chafed and vibrated to pieces. N the rear wheel springing completely obviates this.

One great advantage of my method of rear wheel sprin ing is that, excepting the amputation of the original re fork ends, and attaching the rear mudguard to the carri no alteration to the original Triumph frame is necessary.

Not only is the machine much more comfortable, but t wear on the tyre is also lessened. I may add that I ha applied for protection of many of my devices, and they w probably be placed upon the market shortly.

H. W. TURNER.

Stability.

[5447.]—In the discussion about stability in your colum everything is put down to either engine position or sadd Personally, I think the chief factor is the position of t handle-bars. I have ridden many motor cycles and ha noticed that those with low and wide handle-bars are more steady in grease than those with high ones, either wi or narrow.

For instance, I am now riding a certain German mot cycle with high bars. This I am almost afraid to ride grease, it being nothing but one steady skid! On a frien machine with low wide bars, grease has no effect at all! both machines the engine clearance and footrests are iden cal. Simply for this reason I am selling my German frie and am buying a T.T. touring model, with low wide hand bars.

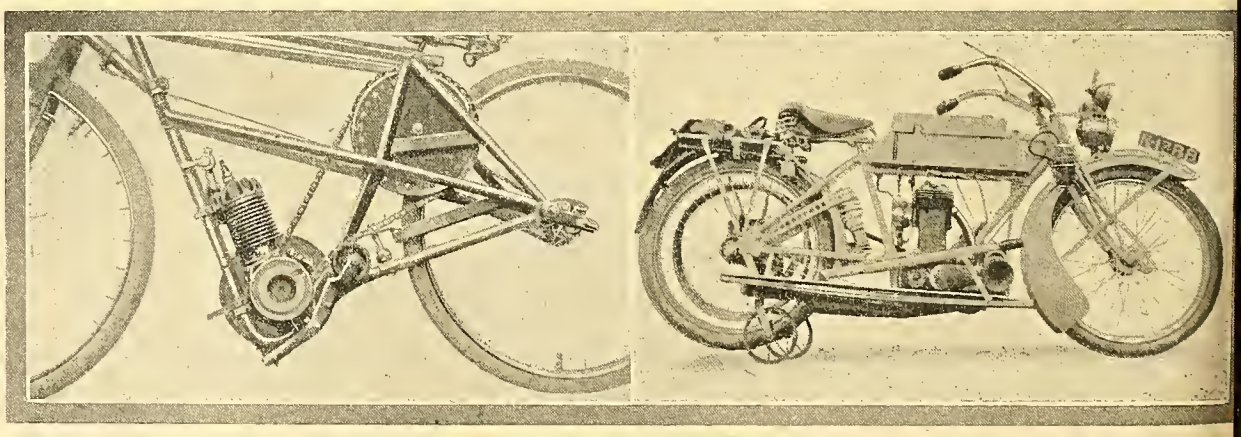
If Mr. Leechman will put a rod through his broom-sti about one-third from the heavy end, and then place the en of the rod on, say, chairs to represent wheels, I think th the total stability will be better with the heavy end dow wards, and so the lower one sits beneath the supports wheels the greater the stability.

Apologising for the length of this letter, ELSIE.

A Strange Experience.

[5448.]—A few days ago I had the misfortune to ha a breakdown at Hathersage, having run out ten miles fr Sheffield at night. My first thoughts were to get home quickly as possible, the last train having gone. Thinkin should be able to free wheel the best part of the way hon I started to push the cycle up the "Surprise." It was hard task, and I reached the top at midnight.

I trudged on to the Toad's Mouth, and then up the to Fox House. Fatigued and hungry, I fell against rocks, only to recover in a dazed condition and frozen the bone. My lamp had gone out previously and generator was frozen. Soon after I reached F House, and made every effort to wake up the landlo I shouted, hammered on the door, and blew the horn in porch continuously. I also called up to the bedroom wind



Illustrating H. W. Turner's letter No. 5446.

A spring-frame machine built early in 1907, but never finished. Mr. Turner's spring-frame mount. It was once a 1908 Triumph.

hat I wanted food. The landlord's own dog barked, but e one appeared. While all this was going on a pedal yclist from Sheffield came to my assistance. He saw I as exhausted, and said he would stand by me until I ecovered. We put the motor in a stable, and laid on the oor. I slept and felt rested, but it was cold and damp, nd I eventually decided to trudge to Sheffield.

The cyclist (he was a brick) walked part of the way back, nd then put me on his cycle to free-wheel home. How I eached there I hardly know, but I remember falling off vice. The cyclist then had to walk home to Bradwell.

It is with no desire to pose as a martyr that I tell you he details of my experience, but to show you that it was a case of need that I called at Fox-House. I have since eard that the landlord said "he never heard me," but the nly cottager close by heard me.

PRO BONO PUBLICO.

Good Performance of a New Two-stroke Engine.

[5449.]—It may be of interest to you to know that the h.p. Levis two-stroke lightweight motor cycle, which as snapped by your photographer on Edge Hill with "two " on the 25th ult., was driven by Mr. Howard Newey, ith Mr. W. H. Butterfield riding on the carrier, from Stech-rd, Birmingham, at an average speed of sixteen miles per our, which, as you will understand, was a most creditable rformance for so small an engine without pedalling gear, pecially when taking into consideration the very heavy ate of the roads and strong head wind.

The two-stroke Levis referred to.

he return journey was made with the same two riders whose combined weight is over twenty stones, making a al distance covered of over seventy miles.

Had we been able to get a machine completed in e, which we endeavoured to do, we feel that, after above performance, the Levis would have made a very d show in the Sutton Coldfield A.C. Reliability Trial.

HUGHES BUTTERFIELD BROS.

Twin-cylinder Sociables.

[5450.]—As an interested reader of *The Motor Cycle* h some experience of single-cylinder machines, perhaps I y be allowed a word *re* the above.

Your correspondent "Ilikum" doubts if forty miles per ur can be got out of the A.C. Sociable with single-cylinder ine; what would he say to forty-five miles per hour? I ve done this over timed stretches, and have never yet met a hill I could not climb at a respectable speed with two up. Most ordinary hills I can take on top gear.

With regard to air-cooling I have driven an "A.C." for over 1,000 miles without the fans, and with such satisfactory results that I do not intend to put them on again. In addition I frequently run the engine for half an hour at a time while the car is stationary, and can drive straight away uphill. I should not, of course, recommend every owner to do this unless the machine is well tuned up and kept in tip-top condition, carburetter properly adjusted, etc.

After trying several makes of carburetters, I have come back to the original "A.C." standard automatic as supplied with the machine, as I find I cannot beat it.

J. MARSHALL.

[5451.]—I have been much interested lately by the correspondence on the subject of a more powerful tricar on similar lines to the A.C. To my mind that subject and the other prevalent topic of the "Problem of the Runabout" are closely related. It seems strange that there should be so much talk about differentials, with their weight and complication, and unmechanical arrangements, such as slipping belts to take their place, when the three-wheeled system with single driving wheel and sociable seating has already proved itself so efficient. However, I fully agree with "Ilikum"—reserve power is always a good thing. How does this suit him: Two stroke, two-cylinders, horizontal opposed twin, water-cooled, and valveless, giving 10 h.p., epicyclic two-speed and reverse, single chain transmission, sociable tricar design with mechanical lubrication, the whole thing with equipment to work out at about £95. I think that if this is the kind of thing desired there is some chance that his needs, and those of his sympathisers, may be satisfied before long.

MOTORETTOR.

[5452.]—The correspondence regarding A.C. Sociables interests me as an owner of a Mighty Atom which I have driven more than 6,000 miles in the Midlands, Yorkshire, and Devonshire.

Myself and passenger weigh about twenty-two stones. With the engine in excellent trim I can touch 37 m.p.h., can climb any hill, and my best run was Birmingham to Torquay (200 miles) in 9¾ running hours. I may, therefore, say that I am a satisfied user.

I have, however, the following criticisms to offer:

1. The power of the engine falls off after running some distance.
2. The fibre discs for driving fans wear unevenly and become very noisy.
3. The low gear is much too low, and although the machine will take two passengers up any hill the gear is really much too low for average hills. An intermediate speed is required.

I have considerably improved the running of the machine by the addition of a hand-controlled air lever. I am now water-jacketing the cylinder and removing the fans. This will do away with objections Nos. 1 and 2.

Prospective customers need not hesitate to purchase, but I quite agree with some of your correspondents that an 8 h.p. twin or a third speed would be welcomed by most of us, much as we appreciate the wonderful flexibility of the present engine.

HIGH TENSION.

An Explanation.

[5453.]—With reference to the correspondence which has appeared in your journal *re* Douglas and Oliver's organisation scheme for motor cyclists, I should like to point out to you that I spoke to Messrs. A. E. Colliver and C. C. Cooke at the committee meeting of the Herts County (Motor Cycle Section) Club, held at St. Albans, on February 9th, explaining the scheme to both of these gentlemen, and I can assure you they both agreed to act on the committee, which I afterwards informed Messrs. Douglas and Oliver, and was more than astonished to read Mr. C. C. Cooke's letter of the 23rd ult.

I personally have no intention of withdrawing from the committee, particularly as I consider the organisation will be a great advantage to motor cyclists and fill a long-felt need.

In fairness to myself I trust you will kindly publish this in your next issue.

W. COOPER.

The Quarterly Trial Course.

[5454.]—I note a mistake or two has occurred in your description of the Quarterly Trial course, and I thought you would like to put them right.

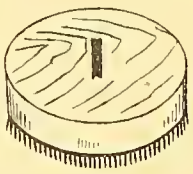
Page 223, column 2, line 7, should read, "And at the next fork the left-hand road," etc. Page 215, column 1, "Historic ruins on the route," the name "Mount Grace Priory" should be substituted in place of "Byland Abbey." Byland Abbey is situate about five miles from the Hambleton Hotel, near the foot of Wass Bank.

There are two more historical piles passed by competitors in the Quarterlies, "Guisborough Priory" and "Ripon Minster."

H. W. FORTUNE.

Removing Carbon Deposits.

[5455.]—Until such time as a substance capable of "decarbonising" road grit has been discovered I am contenting myself with a tool for the removal thereof which may be worth describing. It consists of a piece of weaver's or file card, and may be likened to a brush with short steel bristles.



It is attached to the under-side of a round block of wood, the top of which is nicked to engage with a screwdriver brace bit as roughly depicted in sketch. After the deposit in cylinder head has been roughly scored the card is dropped in and rotated by a brace. By making the head of the cylinder smooth and clean I find that carbonising matter has less tendency to stay inside. Certainly the machine takes air like a Bleriot after it.

RATEPAYER.

Infinitely Variable Gears in Hill-climbs.

[5456.]—We are very glad to see that "Ixion" in his "Occasional Comments" makes some caustic remarks on the attitude of certain clubs in barring "X——" machines.

This designation is perhaps as near as he likes to get at present, but we think that it is now quite time that the actual facts were made public.

The Bristol Club has organised a hill-climb for motor cycles, and, instead of taking the course which would be to say straight out that "Zenith-Gradua" standard touring machines will not be allowed to compete against other touring machines, owing to the number of hill-climbs which they won last season, it has so framed its rules that fixed gears or two or three speed geared machines only can run in the touring classes, which are decided on formula, and has kindly extended its classes for racing machines to "variable gears" as well. The racing classes are to be decided on time alone.

We ourselves, as well as many owners of Zeniths, have protested against this very unfair classification, pointing out that the rules can only operate against Zeniths and one other make which is very little known in competition work, and have pointed out to the Bristol Club's officials that since they have included "variable gears" in the racing classes, in addition to the others, they must have, with intention, barred our machines.

If this club will give its real reasons for this action, which we maintain it should phrase as above, we are satisfied, but the replies so far, first say that the club did not intentionally bar our machines; secondly, that its rules were framed "to suit the majority of the machines on the road"; and thirdly, that "only Zenith riders are complaining"!

For ZENITH MOTORS, LTD.
W. G. BOWER.

Maintenance of Power on Lightweights.

[5457.]—We read with much interest the portion of "Ixion's" comments in your issue of the 16th ult., dealing with the above question, but cannot quite understand how he got the idea that "many of the smaller engines lose power much more quickly than the larger types." It all depends upon what he means by a small engine, and we feel sure that he referred to the engines of about 1½ h.p., which have to be driven at top notch to do any useful work at all on the level road, to say nothing of climbing a "tremendous" hill. There are lightweights and lightweights, and it is rather a damaging statement to make (in a general way) when he says that the lightweight engine is inferior to its big brother in maintaining its power.

A heavyweight machine when driven hard for long periods soon begins to get "tired" (as no doubt many of your readers know), and the lightweight is no better or worse in this respect. A 2½ h.p. machine such as the A.J.S. is quite capable of attaining a speed of forty miles per hour on the road, thus proving that in the hands of a reasonable person a lightweight of that type has some little reserve power for hill-climbing. If a lightweight engine is properly designed (and it is much more difficult to design a successful lightweight engine than a heavyweight) we can see no reason why it should not maintain its powers. As a proof of this, the writer would like to mention the fact that he personally drove successfully a lightweight machine fitted with one of our engines through the 1,000 miles trial of 1909, and almost at the finish of this long and arduous test climbed Birdlip Hill in a manner *The Motor Cycle* described as "excellent," and it is vividly remembered how the writer saw riders of heavyweight machines throwing water on their engines, at the foot of the hill, for a reason well known to every motor cyclist. In our opinion the successful lightweight of the future will be the happy medium between the too light lightweight and the too heavy heavyweight, and we beg to say that several machines of that type are now successfully on the market.

A. J. STEVENS AND CO., LTD.
pp. ALBERT J. STEVENS.

[The machine referred to by Mr. Stevens was a 3 h.p. Wolf-Stevens 62 by 65 mm. twin-cylinder.—ED.]

Variable Compression Devices.

[5458.]—To all who are striving for a greater efficiency of the motor cycle engine, the device of Mr. G. Tagg is very interesting, and a step in the right direction.

What is required is a means of varying the compression while the engine is running, operated while in the saddle. This can easily be arranged, and perhaps "Ixion" or some other expert would say whether "variable compression" would dispense with a "variable gear."

W. E. BURGESS.

Direction Signposts.

[5459.]—We notice in the last issue of *The Motor Cycle* that you illustrate "an out of date signpost," and as this is of considerable interest to us, we venture to enclose herewith an illustration of our design of signposts.

We have for a number of years past made these in very large quantities; in fact, we have supplied about 200 to three different surveyors in England besides large numbers to numerous other surveyors.

We trust same will be of interest.

W. RICHARDS AND SON.

An up-to-date signpost with fingers at varying levels.

[The matter of improving existing signposts has been taken up by the R.A.C. and A.C.U.—ED.]

Lubrication. A Bengal Reader's Suggestion.

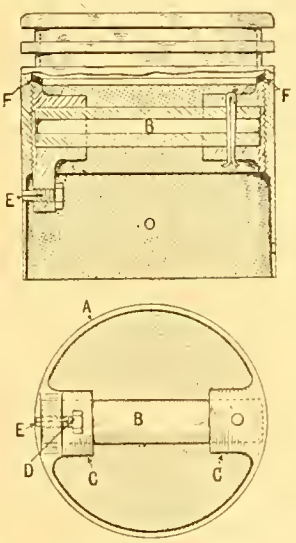
[5460.]—One of the difficulties of lubrication is to know how much oil one has in the crank case without draining the whole lot off. It would be a simple thing to fit a small tap at the oil level in the crank case from which any excess of oil in the crank case would flow out when the cock was turned on. I have not seen the idea mentioned on any of the motor cycles described in your paper. Of course, this must not be confused with inspection windows such as are fitted to the F.N. and some others.

Bengal. F. TRAFFORD.

VARIABLE COMPRESSION DEVICE.

AN INTERNALLY SCREWED PISTON AND MOVABLE GUDGEON.

VARIABLE compression devices appear to be attracting the attention of inventors in no small degree, as we have had several submitted to us recently. However, we think the most practical of all so far is the one we are about to describe. This is being made by the Motor Components Co., Coventry, and is called the Feather-weight piston, an ordinary 85 mm. piston, weighing 17 ozs., with gudgeon pin and locking screw. The principle of construction is made self-explanatory by the accompanying sketch, which shows a part sectional elevation of piston and gudgeon pin and a plan of the gudgeon and lugs and the ring to which they are secured. The ring and the lugs are formed in one piece, and screwed on the outside, and after the connecting rod small end has been threaded over the gudgeon pin, and the latter fastened by the cotter pin, the piston is screwed on over the ring. It will be apparent to anyone that the further the piston is screwed on to the ring the larger will be the compression space.



A Variable Compression Piston.
A. Screwed ring.
B. Gudgeon pin.
C. Lugs.
D. Locking pin.
E. Split end of pin.
F. Removable washer.

To raise the compression the piston is screwed off and washers of varying depth inserted at F. To prevent the ring working back a locking arrangement is provided at D; this consists of a pin screwed through a suitable projection on one of the lugs and entering one of a series of holes drilled diagonally across the piston wall. When the locking pin is screwed into the piston the split ends expand, and the pin cannot turn back without the aid of a spanner. A feature which might escape notice unless particularly pointed out is that the gudgeon pin ends cannot possibly touch the cylinder walls, as they are covered by the piston. This device should meet with success, particularly from competition riders and others who wish to experiment with compression ratios to find the exact compression which suits their engine best for speed tests, consumption trials, and hill-climbs, which necessitate special tuning for the widely varying conditions.

THE SERVICE—A NEW MOTOR CYCLE.

A new motor cycle has been placed on the market by the Service Co., Ltd., which will be known as the Service. The frame is constructed on modern lines and has the dropped tube which has now become so popular. The motive power is a 4 h.p. J.A.P. engine, fired by Bosch magneto, while the Brown and Barlow carburetter will be fitted on all future models. Both the latter and the magneto are controlled from the handle-bar. Druid spring forks are fitted. The rear brake is applied to the belt rim, and the pedal which controls it is mounted on a stud which is separate from the footrest. A Best and Lloyd semi-automatic lubricator is fitted.

DATES OF THE T.T. RACES.

PERMISSION TO USE THE SNAEFELL COURSE.

KILOMETRE RACES ON THE DOUGLAS PROMENADE.

THE Manx Highway Board on Wednesday last week considered the application of the Auto Cycle Union for two days' motor cycle races on the Snaefell course, the dates suggested being 28th and 30th June. The Douglas Jubilee Committee requested the Board not to fix the dates, because, owing to the Coronation, it may be decided to celebrate the Jubilee, starting first week in July. The Board deferred their decision until Saturday for the A.C.U. and the committee to confer as to the most suitable dates. Owing to the banning of the motor car race, the committee wish to make the motor cycle races big events. The result of the meeting was that FRIDAY, 30th June, and MONDAY, 3rd July, were selected for the Junior and Senior Tourist Trophy Races.

The Jubilee Committee also intend holding a flying kilometre race for motor cycles on the cement path on Douglas Promenade, and suitable arrangements are being made with the A.C.U.

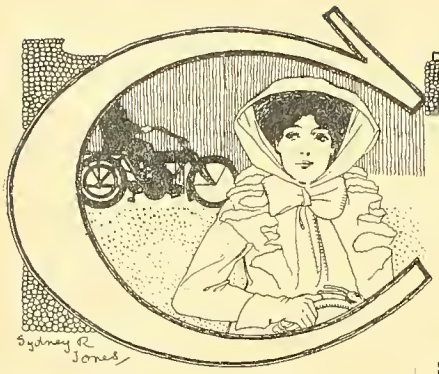
F. Straight, secretary of the A.C.U., has received official intimation from the Manx authorities that permission to use the four-inch course will be granted, subject to the approval of the Tynwald Court.

THE AUTO CYCLE UNION A.G.M. OF PRIVATE MEMBERS.

The above meeting was held at 112, Piccadilly, W., on Thursday last; Mr. Robert Todd in the chair. The chief business was the election of delegates on the General Council and the nomination of councillors who shall be supported in the election of the committee.

Under the item "Other business," Mr. Cove spoke at some length on the inadequacy of the accommodation in the associates' rooms in the new R.A.C. building. These rooms, he understood, have to be closed at 8 p.m.: no food could be obtained except light refreshments, and no alcoholic liquor could be procured. The secretary's office was also hopelessly inadequate. He made a proposal to the effect that these matters should be rectified, which was seconded by Mr. Pratt. There was considerable discussion on the subject, and in the end Mr. Cove withdrew his proposition, and left the matter in the hands of the chairman, hoping he would do his best with the Royal Automobile Club to secure some amelioration of the hardships he had referred to.

THE MOTOR CYCLE Eighth Annual Spring Number
will appear on
Thursday, March 23rd.



CURRENT CHAT

Time to light Lamps
(Greenwich)

Mar.	9th ...	... 6.52 p.m.
,,	11th ...	... 6.56 p.m.
,,	13th ...	... 6.59 p.m.
,,	15th ...	... 7.3 p.m.

Special Features

1911 COMPETITIONS.
M.C.C. EIGHTH TEAM TRIAL: Suggestions Invited.
THE T.T. RACES.
INTER-CLUB TOUR AND HILL-CLIMB AT EASTER.

Our Eighth Spring Number.

The week after next, the annual spring number of *The Motor Cycle* will appear. Although it will be an enlarged issue, the price will be one penny as usual.

Sidecar Climbs a 1 in 3½ Gradient.

Hitherto, tests of hill-climbing of Arthur Street, Edinburgh, have been confined almost entirely to cars, but last week a well-known motor cyclist successfully attempted the feat. Arthur Street is exceedingly steep, the worst part, it is said, rising 1 in 3½. Ernest Frasetti, the well-known music hall artiste, is supposed to be the first sidecarist to climb the hill on a 7 h.p. two-speed Indian and Mills-Fulford spring wheel sidecar. But there was no doubt about the engine proving equal to the task, for besides a Mr. Geoffrey in the sidecar, J. R. Alexander was seated on the back carrier, a total weight of 35½ stones. The surface being rather slippery, cord was tied round the driving wheel to ensure a better grip, and a second attempt was made with a fourth passenger, a little boy being seated in the foot of the sidecar, but the cord wore out before they had got little more than half-way up. The gradient being so steep the stand was left to trail, and so acted as a sprag in case the engine stopped.

Shelsley Walsh Hill-climb.

On June 10th the Birmingham Motor Cycle Club has arranged for an open hill-climb at Shelsley Walsh, to be held after the Midland Automobile Club car climb, which is a popular annual event. Shelsley Walsh is in private ground, and the steepest gradient is 1 in 5.

Isle of Man Speed Limit Abolished.

The Manx House of Keys has decided to abolish the speed limit for motor vehicles by a large majority, members denouncing the limit as absurd and useless This action followed the rejection of a proposal to increase the limit of fourteen miles to twenty. The period of exemption of visitors from the necessity of taking out licences was reduced from two months to one.

A Distinction without a Difference.

Motor cyclists who may discover a police trap and are anxious to prevent others from infringing the law with respect to driving in excess of the legal limit, should bear in mind that if they give warning of the existence of the trap they must be careful to do so before an offence is actually commenced, *i.e.*, before the offender has actually entered the measured distance. Although it is allowable to warn a person not to commit an offence against the law, it has recently been decided in the courts that it is illegal so to warn him when he has once commenced the infringement. "A distinction without a difference" to the layman, though constituting the essence of criminalty to the legal mind!

Another Audacious Theft.

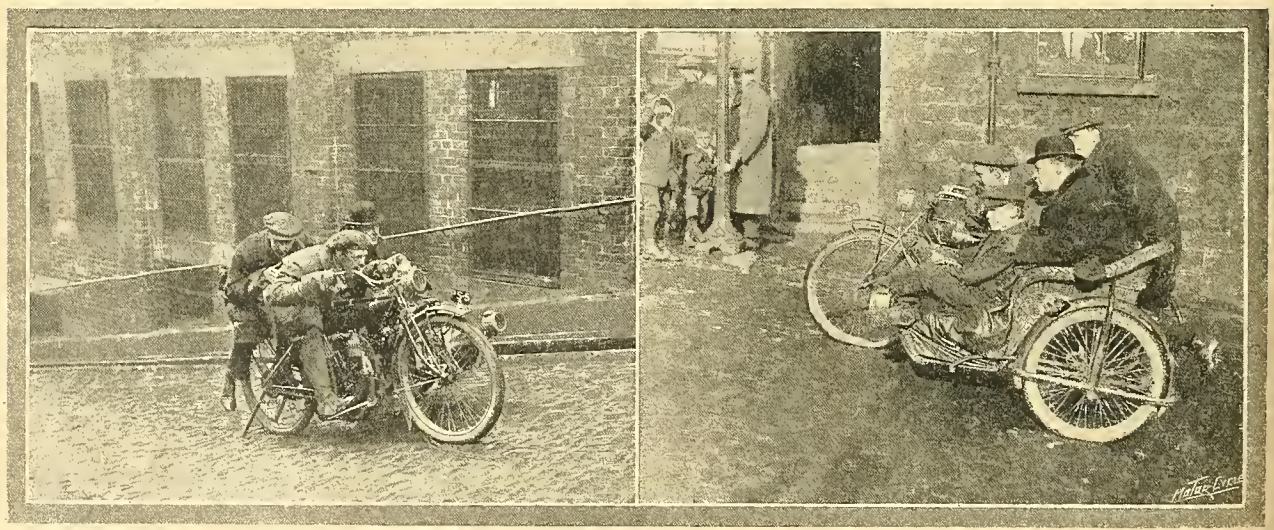
A Mr. Flack, of 29, Davies Street, W., has had his 1909 Triumph stolen by a man who asked if he might run the machine along to test the compression, but hopped into the saddle immediately the engine fired, and has not been seen since. The engine number is 4860 and the registration mark LN 7576. Mr. Flack is insured with the A.A.

The Team Trial

With a view to furthering the popularity of the M.C.C. team trial for *The Motor Cycle* fifty guinea challenge cup, the trials hon. sec., J. Van Hooydonk, invites our readers to send him suggestions for improvement of the rules. For the last two years record entries have been received. See page 234.

An All-round Sportsman.

An example worth copying by those professional footballers who have a lot of spare time and plenty of cash, go ye and imitate that Triton amongst footballers and cricketers, Jack Sharp. This "double international" has certainly forsaken the football, but he is finding glorious recreation in golfing and motor cycling, revelling in the latter with an ardour that always characterises him in the field.



E. FRASETTI CLIMBING ARTHUR STREET, EDINBURGH (see paragraph above).
On the steepest gradient, 1 in 3½. An attempt with four up which proved unsuccessful.

hister Pass Climbed.

n the presence of from fifty to one dred spectators, Hugh Gibson has n climbed Honister Pass. He rode edalless Bradbury geared 6 to 1.

Zealand Trial

n the North Canterbury M.C.C. mile reliability trial between istchurch and Dunedin, R. N. ms (3½ h.p. Triumph) won his class 985 points out of 1,000 possible. he private owners' section S. F. ett, also on a Triumph, won with marks.

ing on the Continent.

E. Catt, the long distance motor record holder, is at present tour- the South of France and Italian . He is accompanied by W. att, another leading Northampton r cyclist, and F. Gibbons (Not- am) of London-Edinburgh fame.

-club Hill-climb on Easter Saturday.

ing to the trouble arising over permission to use Sutton Bank for North v. South hill climb on April it has been decided to hold the etition on a hill of equal severity. permission has already been ned. The venue will, however, pt secret until the night previous e event.

em Tricars.

paragraph in the last issue ng to the novel form of passenger seen on the Coventry-Birming- Road has brought forth a letter A. Morrison and Co., of ster, who say that they con- ed a 3½ h.p. tricar with seats n fashion about seven years ago. found a drawback in this design t the passenger cannot assist in ing a corner which renders the ne unsafe at speeds. As a real r of fact a sketch suggesting form of passenger machine red in *The Motor Cycle* of 1903. oes not follow, however, that objection outlined by Messrs. son and Co. cannot be overcome itable arrangement of seats and distribution of the weight.

Wilding Still Winning.

t enthusiastic Bat-Jap rider and ion tennis player carried off the ionship of Monte Carlo at the ennis tournament last week, win- the open singles and also the s with M. J. G. Ritchie as part- It will be recalled that Mr. ng recently wrote an article for lumns entitled "To the Near East otor Cycle and Sidecar."

ere Test Run

splendid performance was accom- d on Friday last by a 1911 P. M. and sidecar driven by B. ns, with W. Cooper and E. ne as passengers, total weight ones. Starting from Mortimer , through the traffic of Baker and St. John's Wood Road, machine climbed Fitzjohn's e with three up. Descending ill, it afterwards climbed the nown test hill of Netherhall ns successfully with sidecar and senger from standing start.

FUTURE EVENTS.

Mar.	18	B.M.C.R.C first 1911 meeting at Brooklands.
,,	23	A.C.U. Annual General Meeting.
,,	25	Meeting at Brooklands.
Apr.	1	M.C.C. Opening Run to Brighton.
,,	1	Oxford M.C.C. Open Hill Climb.
,,	14-17	M.C.C. London-Land's End Trial and Easter Tour.
,,	14-17	Herts County A.C. Inter-club Tour, Barnet to Harrogate and back, and Open Hill Climb.
,,	17	Westmorland M.C.C. Open Hill Climb on Shap Fell
,,	22	A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,,	29	Bristol B. & M.C. Open Hill Climb.
May	6	Herts. County A.C. Open Hill Climb.
,,	27	Herts. County A.C. Open Speed Trials.

Lady Competitors for "The Motor Cycle" Cup.

Mrs. C. C. Cooke, who is arranging the Herts County A.C. ladies' reliability trial from Barnet to Harrogate and back at Eastertide, advises us that there are already five probable starters. This competition being the first of its kind, *The Motor Cycle* has presented a cup to be won outright by the lady riding most regularly throughout. Intending competitors should write Mrs. Cooke for details at Rose Cottage, North Mimms, Hatfield.

Amongst lady motor cyclists who have already entered for the trial is Mrs. Hardee, of Greenwich, whose machine is a two-speed P. and M. Mr. and Mrs. Hardee have motor cycled for over eight years, and on a twin V.S. and sidecar have toured in many parts of England, Scotland, and Wales. Mr. Hardee, who is an old professional sculling champion, now owns a Triumph, and accompanied by his wife has already made several long runs this year. His wife, on the P. and M., has climbed Westerham, Titsey, Toys, etc. Mrs. Hardee aspires to being the first lady motor cyclist to climb Chalk Pit and Salt Box, and she considers this will be excellent preparation for the Herts trial, though, of course, the competitors will not have such a severe climb to negotiate. She favours a man's machine, and thinks that ladies require a powerful engine and two speeds, and that an ordinary walking skirt made divisible with fasteners is most suitable wear.

Mrs. Hardee, a prospective competitor in the first lady motor cyclists' competition.

Miss Berend's Brough.

Miss Berend—another entrant for the cup—has sent us the following particulars of her machine, which we illustrated in our issue of the 23rd ult. The engine is a 3½ h.p. Brough, 85 × 88 mm. It has low compression and easy fitting piston so as to facilitate starting. There is a clutch of the expanding type in the rear hub and an internal expanding back brake. The riding position is very low and comfortable, and Miss Berend informs us that the machine is one of the easiest to manage she has yet possessed, since it negotiates the traffic in a delightful manner. This is the fourth motor bicycle Miss Berend has owned. The first was a Zenith bicar, which, she informs us, taught her much mechanical knowledge, and she then had two Moto-Rêves, 1909 and 1910 patterns.

Auto Cycle Union News.

MEMBERSHIP. — Over one hundred members were elected at a recent committee meeting of the Union.

AFFILIATION.—The following clubs have been affiliated to the governing body: The Lincolnshire Automobile Club (Motor Cycle Section), the Ilkley and District M.C.C., the Yeovil and District M.C.C., the Cornwall M.C.C., and the Leicester and District M.C.C.

DIRECTION SIGNPOSTING.—The Auto Cycle Union has decided to circularise its affiliated clubs with regard to approaching the local authorities with the object of securing the provision of new signposts where necessary, and the maintenance and repair of existing ones. It is also suggested that the authorities should be urged to repeat the information on either side of each direction arm, and, in cases where the post bears more than one arm at different angles, to place the arms at varying heights in order that each one separately may be readily distinguished.

THE A.C.U. AND THE TRADE.—On the occasion of the organisation of all trials and competitions, it has been decided that members of the Cycle and Motor Cycle Manufacturers' and Traders' Union be invited to discuss the regulations with the Auto Cycle Union Committee.

NEW HEADQUARTERS. — The Auto Cycle Union offices are now installed in the new R.A.C. premises, Pall Mall, S.W. Telephone, 500 Mayfair. Private exchange, 73.

Restarting on 1 in 4.

A telegram from J. A. Prendergast announces that he climbed Sutton Bank four times on a free engine Rudge last week-end, twice from a standing start on the steepest gradient. So far as we are aware, this is the first time a single-geared machine has restarted on the steep stretch and completed the climb.

The Quarterly Trials and T.T. Races.

MANUFACTURERS' DECISIONS.

A COUNCIL meeting of the Motor Cycle Section of the C. and M.C.M. and T.U., Ltd., was held in Coventry on Friday last, when a letter was read which had been received from the Auto Cycle Union inviting the Traders' Union to appoint a standing sub-committee to co-operate with the A.C.U. when considering regulations concerning open competitions promoted by the A.C.U. The letter was fully discussed, and the action of the A.C.U. was much appreciated by the Traders' Union, with a result that a standing sub-committee has been appointed as follows: Messrs. W. Douglas (Douglas Bros., Ltd.), F. Hulbert (Triumph Cycle Co., Ltd.), W. H. Wells (Hendee Mfg. Co., Ltd.), T. H. Tessier (The Bat Motor Mfg. Co., Ltd.), and W. Williamson (Rex Motor Co., Ltd.)

In a letter which Mr. Alfred Bednell (secretary of the Traders' Union) has addressed to Mr. F. Straight (secretary of the Auto Cycle Union), he points out that the members of the trade are quite unanimous in believing that such co-operation as the above will remove all future misunderstanding and enable the two bodies to work together harmoniously.

Resolution regarding T.T. Race Rescinded.

The olive branch having been held out by the Auto Cycle Union the trade have now decided to rescind the resolution passed by a previous meeting that members should abstain from the next Tourist Trophy Race unless twin cylinders were barred in the Senior T.T. competition.

With regard to the Quarterly Trials resolution, and the decision of the trade not to support future Quarterly Tria it is not unreasonable to hope that the co-operation of t two bodies will ultimately find a solution of this difficul However, the previous resolution that members will support either directly or indirectly any Quarterly Ti during 1911 was confirmed in spite of the fact that t members representing well-known firms in the trade not agree with the resolution and will compete.

With a view to clearing the air respecting trade ent for other club trials we asked Mr. Bednell whether members of the Traders' Union were at liberty to er such trials if their riders were eligible. The secreta reply was that the trade regarded the Auto Cycle Un Trials as the most important of the year, and the A.C as the leading organisation in the pastime, and until standing sub-committee was formed to confer with A.C.U. concerning trials it was the opinion of the majo of the members that they should abstain from entering Quarterly Trials. At the same time, there was nothing prevent members entering other club events.

The "Shamateur."

Incidentally, we were informed that the Traders' U intends to do all in its power to prevent the "shamate —Mr. B. H. Davies's apt title for the pseudo-amateur—ta part in any competitions controlled by the A.C.U., and already asked the governing body to call upon man turers to guarantee that they are not subsidising any about whom the A.C.U may have doubts; the rider also be called upon to supply such information as will p that he is not infringing the definition of an amateur as laid down by the Auto Cycle Union.

LUBRICATION.

SUMMARY OF A LECTURE BY MR. J. W. G. BROOKER.

A LECTURE was given by Mr. J. W. G. Brooker before the members of the Streatham and District M.C.C. on Friday, March 3rd. Mr. H. P. E. Harding was in the chair, and introduced Mr. Brooker to the meeting.

At the outset, Mr. Brooker pointed out that hot metal surfaces strongly pressed together soon seize if the oil is too light in body and of unsuitable composition. On the other hand, too heavy an oil will entail unnecessary expenditure of energy to keep the metal pieces moving, owing to the clogging qualities. Too heavy an oil is also bad, as it tends to excessive carbon deposit. According to the work required of an engine so the thickness of the oil may vary. Fast work with a hot engine will reduce the viscosity of even the heaviest lubricant. With thick oil in a cool engine the piston scrapes the oil into the comparatively cool combustion chamber, where it remains, and gets roasted on to the surface instead of being burnt up and ejected with the exhaust.

Comparing drip feed and pump lubrication, the lecturer said that to the experienced rider the hand pump gives best results. Firstly, drip feed varies with engine speed and not with the load. For instance, when climbing a hill more oil is needed, but actually less is supplied owing to the engine speed falling off. Referring to the oil spray from crank case to induction pipe, exclusive to Rex machines, it undoubtedly affords extra lubrication for speed work. Showing an example of the Indian mechanically operated pump, this device attains the same end as the drip feed, but in a different way. This, however, again is proportionate to the number of engine revolutions and not the load.

Carbon deposit is more than ever a matter important to motor cyclists. Ofttimes a slight lining of non-conductive carbon in the cylinder is beneficial, as it retains more heat in the cylinder for the work required. Also by retaining the heat it raises the temperature of the charge when being compressed, and it therefore does more work when ignited. Of course, this is useful to a certain point, but it can become a curse. Excessive deposit over increases the heat of the compressed charge, and when ignited it explodes instead of burning, hence knocking and "conking" on high compression engines.

Castor oil withstands great pressure, and large variations of temperature, still retaining its lubricating prope Other conditions being favourable, such as balance and ness of moving parts, the limit of piston speed is governed by the suitability of the lubricant.

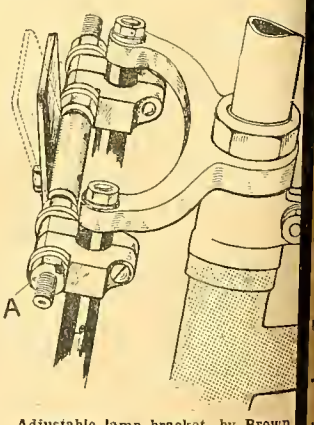
Various samples of oils were shown and many firms sundry exhibits of lubricating devices. Some clutches also shown, and the lecturer pointed out that it was ina able to use too thin an oil in a clutch, as it tended harshness of action, more particularly as regards plate clu

There was a very large attendance, and several me raised interesting points in the discussion which ensue

Mr. Brooker dealt with all the points in a very manner, and the meeting closed with a hearty vote of th proposed by the Chairman.

NEW ADJUSTABLE LAMP BRACKET.

The Duco adjustable motor cycle lamp bracket for on front fork girders is an article which will fill a lon want—its chief advantage is that the lamp can be tilted at any angle. The bracket is attached to a screwed bar which can be rotated in tapped holes in the clips, thereby enabling the necessary angle to be obtained. To prevent it from moving, locknuts A are fitted each side of the clips. The screwed bar enables the most delicate adjustment to be obtained. This bracket is sold by Brown Bros., Ltd., Newman Street, Oxford Street, W.



Adjustable lamp bracket, by Brown

Northern League of Motor Cyclists.

IMPORTANT MEETING AT YORK.

THE first annual general meeting of this League was held at York on Saturday last. The members sat from 3 till 10.30 p.m. and then adjourned until March 25th without concluding all the business on e agenda paper.

In the absence of the chairman and vice-chairman, the air was taken by Mr. W. H. Fortune, the hon. solicitor. It was explained that, before calling this meeting, the ficials of the League had been awaiting proposals from e Auto Cycle Union with regard to a settlement of the esent state of affairs to enable both bodies to work rmoniously together. As nothing had been received from at body, it was decided to continue the present successful ague policy, and not surrender that freedom of action it it has enjoyed in the past.

Confirmation of the Annual Report.

The annual report and results of the Garrowby and rrogate Team Trials were confirmed. The distribution prizes won during 1910 was fixed to take place in the wn Hall, Richmond, on Good Friday next.

A number of letters relating to prizes and trophies were d, the president of the League (Mr. J. W. F. Tranmer) closing a cheque to provide the League with a handsome allenge Cup. Other cups and donations towards the prize d were also promised.

Letters had been received from several outside clubs asking for details, and it is anticipated that before Easter the number of clubs in the League will be nearly doubled.

The election of officers for 1911 resulted in practically no change. The name of Mr. T. S. Webster was added to the list of vice-presidents.

The 1911 Programme.

Good Friday (opening run), meeting in the market place at Richmond, Yorkshire, at 11 a.m. Secretaries of clubs taking part in the meet are requested to organise a competition in the form of a road trial to take place on the way to the meet and to finish at Richmond, arriving not later than 11 a.m. Monster speed-judging contest (open to all comers) to Reeth (ten miles). 1.30 to 2.30 p.m. lunch. 2.45 p.m., annual group photograph for *The Motor Cycle*. At 3 p.m. the prizes won during the morning will be distributed in the Town Hall.

April 17th (Easter Monday).—Meet at Scarborough. Hill climb on Slaxton Brow, organised by the Scarborough and District M.C.C.

The next meeting will be held at Leeds on March 25th, when outside clubs will be cordially welcomed.

The secretary is Mr. T. H. F. Straker, 12, Percy Street, Hull. Correspondence relating to competitions should be addressed to the trials sec., Mr. H. Frain, Snainton Yorkshire.

nter-club Tour to Harrogate and Open Hill-climb.

Five Clubs to take part in an Easter Competition.

THIS event was promoted last year by the Herts Club with the idea of combining a holiday tour with a reliability competition, and a trophy, given by the Service Co., was put up for the winning team. The r proved popular, though limited to two clubs, the trophy ng won for the first time by the North-west London C.C. This year the event will be run under very similar ditions, though to increase the holiday aspect of the r it has been decided to abandon secret checks. The te, also, has been altered to cut out the long uninterest- stretch from Stamford to Retford, and to make it sible to avoid the latter town with its vexatious ten- e limit. Starting from Barnet competitors will proceed Biggleswade to Norman Cross, turning to the right there Peterborough, Sleaford, Lincoln, and Gainsborough, re- ing the Great North Road at Bawtry. From this point year's route to Harrogate will be followed.

Another innovation will be the inclusion of a special class ladies, for though several ladies went through the tour year, only one (Mrs. C. C. Cooke) took part as a com- tor. This time, however, there will be a class for ladies, nks to *The Motor Cycle*, this journal having presented a to be won outright.

The Competing Clubs.

he clubs which will take part in the tour are :

he North-west London M.C.C.
he North Middlesex M.C.C.
he Harrogate and District M.C.C.
he Bradford M.C.C.
he Herts County A. and A.C.

n addition, the Coventry and Warwickshire M.C. will bably enter, so that the success of the event is assured.

he headquarters of the Herts Club at Harrogate will be Clarendon Hotel. Intending entrants are advised to te in good time to Mr. C. C. Cooke, who has just been Harrogate to make final arrangements, in order that the essary accommodation at other hotels may be secured.

e competition is divided into two sections.

a.) Inter-club competition for teams of twelve riders, prising the outward and homeward journeys.

b.) Inter-club open hill-climb. In addition, members of peting clubs may enter for the run and qualify for a te. Marks will be awarded as follows :

00 for reliability on outward journey.
00 for reliability on homeward journey.
00 for hill-climb.

To gain a first-class award a competitor must secure ninety-five per cent. in each of the three sections.

North v. South Hill-climb.

The following classes have been decided upon for the inter-club hill-climb (North *v.* South) on Easter Saturday :

Class 1 for teams. Each club able to nominate one team only, and the teams to constitute one touring twin, two T.T. model singles, two touring singles, and one lightweight. The team securing the best aggregate result on formula to be declared the winners.

Class 2. Flexibility trial for any single cylinder machine, fixed gear, clutch, or two-speed, etc.

Class 3. For lightweights not to exceed 125 lbs. in weight, and the c.c. not to exceed 325.

Class 4. For ordinary single-cylinder models up to 517 c.c.

Class 5. For ordinary twin-cylinder models up to 670 c.c. (Classes 3, 4, and 5 on formula).

Class 6. For any single-cylinder machines.

Class 7. For any machines (classes 6 and 7 fastest time).

No pedalling allowed in any class. Cut-outs allowed, and complete open exhausts in classes 6 and 7.

ENTRY FEES. 5s. for teams (to be paid and teams nominated by the various clubs). For the ordinary classes 2s. 6d. per class.

To give all the members of each team an opportunity to earn full marks for the hill-climb the following novel method has been devised for arriving at the marks to be given for this part of the competition. All the results will be worked out by the A.C.U. formula, the highest figure of merit in any team being taken as the standard and awarded 100 per cent. For every .075 or part of .075 below that standard one per cent. will be deducted.

To qualify for the hill-climb all the Southern competitors must make the outward journey by road in competition.

B.M.C.R.C. FIRST 1911 MEMBERS' MEETING.

Entries for the meeting on the 18th inst. close on Saturday next. A gold medal will be presented to the winner of the All-comers' Handicap, silver and bronze medals to second and third. A silver cup, presented by the Hendee Mfg. Co., will be awarded the winner of the first senior one hour T.T. race, and a silver cup, presented by Mr. A. J. Wilson, to the winner of the first junior one hour T.T. race. The B.M.C.R.C.'s gold and silver medals will be awarded the second and third competitors respectively.

CLUB NEWS

Scarborough and District M.C.

The annual general meeting was held on February 28th in the new club room, when a large number of members passed the secretary's report for 1910. The membership of the club is now well over 100, and the new club house has proved a most attractive acquisition. After the election of officers and committee the club rules were thoroughly revised.

Walthamstow M.C.

A large company much appreciated the lantern display given on the 2nd inst. at the club's headquarters, the Rose and Crown, Hoe Street. The subjects dealt with included the Tourist Trophy Race, the Cheddar Tour, and the tour to Loch Lomond. The club supper will be held at headquarters on the 16th inst., and the tickets (2s. 6d.) can be obtained from the secretary, 13, Church Hill, Walthamstow.

Liverpool A.C.C.

The following fixtures have been arranged for this month:
Mar. 12th.—Opening run to Denbigh *viâ* Birkenhead. Meet Landing Stage, 9.30 a.m. for 10 a.m. boat.
,, 19th.—Club run to Llangollen *via* Birkenhead. Assemble same time and place as above.
,, 26th.—Run to Buxton *viâ* Warrington. Meet Abbey Hotel, Broad Green. Leave 10.30 a.m.

Western District M.C.

The club's opening run proved very successful, and augurs well for the year's prospects. Several entries have already been received for the paperchase to be held on March 12th, and intending entrants should notify as soon as possible the hon. secretary, Mr. J. V. Armstrong, Eden Hall, Montpelier Road, Ealing. On Saturday, March 11th, a run will be held to Rickmansworth (Victoria Hotel), starting from the meeting place at 3 p.m.

Ilkley and District M.C.C.

A breakdown competition was held at headquarters last Friday. All the competitors failed to find out the first fault, although they were allowed ten minutes in which to do so, so the committee deranged the machine again in a simpler form, the time allowed being five minutes. The machine used was a 1909 Triumph. First breakdown—High tension wire shorting and throttle wire off lever. Second breakdown—Faulty plug. Results: 1, P. Fairburn, time 3m. 33½s.; 2, D. Wilson, 4m. 25s. The prize was a lamp, given by Messrs. Denby and Co., Ilkley.

Bishop Auckland, Darlington, and District M.C.

A lecture on "Internal Combustion Engines as applied to Motor Vehicles and Cycles" was given by Mr. Sidney F. Hill, A.M.I.Mech.E., A.M.I.A.E., at the King's Head Hotel, Darlington, last week, before about sixty members and friends. The lecturer dealt very fully with the working and comparison of the two and four cycle principle. With the use of upwards of one hundred lantern slides, Mr Hill very clearly illustrated the various points of his subject. The club is to be congratulated on having amongst its members so able a lecturer as Mr. Hill.

Bolton and District M.C.C.

The club's annual dinner and social was held on February 22nd at the Packhorse Hotel, the president, Mr. A. R. Batten, being in the chair. The speeches were specially directed to the lack of vitality in the club, and much discussion took place as to the best means of infusing a little more enthusiasm into members. There were between two and three hundred motor cyclists in Bolton who would respond to a vigorous and attractive programme properly organised. Three medals were offered for competition, and it was hoped that other motor cycle clubs would be willing to negotiate for the arranging of the inter-club runs during the coming spring and summer.

Oxford M.C.C.

The members' opening hill-climb will be held on Sat day at Irondown Hill, Oxon. There will be two classes single-cylinder and multi-cylinder machines respective and the club's headquarters for the day will be the Unic Hotel, Deddington.

Birmingham M.C.C.

The programme of competitions and motor cycle eve for 1911 is one of some magnitude, and the Birmingham Land's End and back competition on June 3rd and should be particularly attractive to devotees of the sp in the Midlands, as well as the Shelsley Walsh open h climb on June 10th. The programme has been well p duced on stout card suitable for hanging up, and will sent to any motor cyclists or garages and hotels on ap cation to the secretary enclosing two stamps for postage

Sutton Coldfield A.C.

Members of the club have made full use of the le department during February, the club's hon. solicitor, George E. Urry, having on two occasions obtained dismissal of charges against members in the Bromsgr Police Court for exceeding the speed limit.

Motorists in the district wishing to have full particul of the club should write to the hon. secretary, How Smith, The Dingle, Four Oaks, for a copy of the souve booklet containing many illustrations, together w general information regarding the club's management.

Fleet and District M.C.C.

An extraordinary general meeting of the club was h at Fleet on the 1st inst. to consider the proposed amalga tion scheme made by the Winchester Motor Cycling Cl The scheme was adopted, and the name of the central c will be the Hampshire Motor Cycle Club. It is hoped t the amalgamation will secure the advantages of a powe central body without destroying the local interests of individual clubs. The meeting also decided that an entra fee of 2s. 6d. should in future be charged to new memb

Hull and East Riding A.C.C.

The annual general meeting of the Hull and East Ri Auto Cycle Club was held last week at its headquart the Grosvenor Hotel, when matters relating to the wel of the club were fully discussed. Dr. Coates and Mr. Ellis were re-elected president and captain respectively a strong committee was also formed.

The nominal subscription of 5s. per annum enti members to all the advantages connected with the club, intending new members should send in their names to J. Fletcher Walton, 6, May Street, Hull, the ne appointed hon. secretary.

Newcastle and District M.C.

The club's annual meeting was held at the luxurio appointed club house, Saville Row, Newcastle-on-Tyne, Friday night, when there was a good attendance of m bers, and the annual report and balance sheet presented the secretary, Mr. Hawkins, was passed. It showed a sl adverse balance on the year's working, but apart from financial aspect the season had been a very successful It was announced that the North-Eastern Automo Association had agreed to take fifty debenture shares the club, and had paid over to the club a sum of mone return for which country members of the association w have the free use of the club premises when in Newca It had also been arranged that affiliated members of Newcastle and District Motor Club could join the N.E. as direct members at an annual subscription of one gu for three years instead of two guineas. Thirty-three members have already joined this year.

b News.—

Proposed Motor Cycle Club at Chesterfield.

Many local suggestions have been made for the formation of motor cycle club in Chesterfield and district, and any who y be interested are invited to attend a provisional meeting be held at the Hotel Portland, Chesterfield, at 7.30 p.m. Wednesday, March 15th. Those wishing to attend are ed to send their names and addresses to Lawrence Smith, osemount," 23, Clarence Road, Chesterfield.

S.E. London M.C.C.

t is proposed shortly to convene a meeting to discuss formation of this club. Will motor cyclists in the ghbourhood of Forest Hill, Catford, Brockley, and Peckham, dly communicate their intention of attending such meet- to Mr. V. Edwards, 9, Honor Oak Park, S.E., and in this nection, also will those residing in Sydenham, Penge, and kenham, kindly communicate with Mr. A. E. Reiffer, 35, ighton Park Road, Sydenham, S.E., to enable the organisers make the necessary arrangements for holding this inaugural eting.

Leeds M.C.C.

At a general meeting of this club last week the president, . Rowland Winn, spoke very strongly concerning the thy hitherto displayed by members towards the sport, and only consented to act for another year on condition of ater support in the working of the club. Several new nbers were elected, and Mr. J. R. Kelly, 25, Bridge End, eds Bridge, Leeds, was appointed hon. sec. and treasurer. ile F. O. and F. K. Langton were elected joint trial hon. s. The subscription is now 10s. a year without any rance fee.

North West London M.C.C.

Fixtures have been decided upon as under:
Saturday, March 25th.—Paperchase.
Saturday, April 8th.—Petrol consumption trial.
Friday, April 14th, to Monday, April 17th.—Easter tour. rrogate reliability trial for the Service Cup.
Saturday, April 29th.—Flexibility hill-climb.
Saturday, May 20th.—London to Coventry reliability trial.
Saturday, June 3rd.—Whitsun tour.
Saturday, June 17th.—M.C.C. inter-team trials for *The tor Cycle* Cup.
Saturday, June 24th.—Club hill-climb.

Coventry and Warwickshire M.C.

To-morrow (Friday) the A.G.M. will be held at the Drill ll, Coventry, at 8.30 p.m., when the secretary's report treasurer's balance sheet will be received, and new officers cted. On Saturday the opening run and speed judging petition will be held as before. Members meet at the idence of the president, Mr. John V. Pugh, J.P., at esley. Tea will be arranged at the Dun Cow, Dunchurch. There is a suggestion to enter a team in the Herts County C. open inter-club reliability trial and hill-climb at Sutton nk at Easter-tide. The feeling of members is being taken the subject.

Westmorland M.C.C.

The Westmorland M.C.C. and Cumberland M.C.C. are having a joint hill-climb on Kirkstone Pass, near Ambleside, on April 14th, starting at 2 p.m. Two classes, single and twin-cylinder. Good prizes have been provided, including gold medals for fastest time.

Western District M.C. (London).

A most attractive programme has been arranged, and it is hoped that members will show their appreciation of the committee's efforts to meet their requirements by supporting the runs in a hearty manner. A special prize will be awarded to any member who attends at least 50% of the fixtures.

Cambridge University M.C.C.

This club held a reliability trial of forty-seven miles on Wednesday, the 22nd ult., the route being: Cambridge to Royston (thirteen miles), Royston to Godmanchester (twenty miles), Godmanchester to Cambridge (fourteen miles). There were controls at Royston and Godmanchester. Of twenty-six starters, fifteen made non-stop runs, the winner being H. G. Rawlins (3½ h.p. P. and M.) with non-stop run and correct time. T. A. Monckton (3½ h.p. Triumph), was second with non-stop run, but half a minute early on the last section of the route. The following also made non-stop runs: N. Gray (Premier), W. Fox-Strangways (Bradbury), C. C. Guthrie (four-cylinder F.N.), J. S. Parker (8 h.p. Bat and sidecar), R. C. Farnsworth (Indian), J. P. Wills (Zenith-Gradua), T. M. G. Chapman (Triumph), C. R. McIver (Ariel), G. Gillan (Douglas), A. W. L. Barlow (Douglas), H. H. King, E. S. Brittain (Bradbury), and A. Drysdale (5-6 h.p. Matchless and sidecar.

OXFORD M.C.C. OPEN HILL-CLIMB.

This club will hold an open hill-climbing competition under A.C.U. rules on Saturday, April 8th, and for this event special gold medals have been presented by the Triumph Co., the Service Co., Ltd., and a silver cup by Mr. W. R. Morris. Competitors will be classified as follows:

Class 1.—Junior T.T. machines, single up to 300 c.c., twins 340 c.c.
Class 2.—Standard touring lightweights, up to 130 lbs.
Class 3.—T.T. single-cylinder machines, up to 500 c.c.
Class 4.—T.T. twin-cylinder machines up to 670 c.c.
Class 5.—Standard touring single-cylinder machines.
Class 6.—Standard touring twin-cylinder machines.
Class 7.—Standard touring, single and twin, fitted with variable gears.
Class 8.—Any type of single or twin up to 1,000 c.c.
Clas 9.—Passenger machines.
Classes 1, 3, 4, fastest time to win.

Classes 2, 5, 6, 7, 8, 9, the cubical capacity being unlimited the results will be decided on formula.

The competition will be held about thirty miles from London and about the same distance from Oxford.

Entry forms and full details of this competition may be obtained from the trials hon. sec., H. G. Hill, 11, Market Place, Banbury. Entries close on the 25th inst.

Group taken before the start of the Cambridge University Motor Cycle Club Reliability Trial, described in a paragraph above.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Escape of Oil.

I have a 4 h.p. Roc, and my trouble is oil blowing through centre of the flywheel axle. I have one ball air release over timing gear case which is lubricated from crank chamber. Would it be safe to close up end of axle?—W.F.C.

If you plug the hole in the hollow crankshaft you should fit another ball air release valve. If oil comes out of these connect a small pipe to the outlets which would conduct the oil away on to the ground.

Knocking.

I have been having a lot of trouble with knocking on one cylinder (front, I think) of my 1910 7 h.p. V.S., which has run about 1,000 miles. It is a metallic knock, and occurs when picking up and on hills. Also it will not take as much air as before the knocking started. I should be much obliged if you could help me in any way.—H.G.

We can only think that the knocking is due to pre-ignition, caused by the use of an unsuitable sparking plug, such as one the points of which project too far into the cylinder. If our surmise is not correct, when you dismantle the engine you should note carefully whether any of the bearings or gudgeon pin are loose, and also that both pistons are being evenly lubricated. Knocking is sometimes caused by the spark timing being too far advanced.

Two-speed Gears.

Will you kindly advise me whether with a two-speed epicyclic hub gear fitted to my Triumph—(1.) I should get the same speed and power from the engine? (2.) Could I change on hills with load (25 stones)? (3.) Is a gear any trouble? (4.) What ratios would you advise?—G.E.M.

(1.) We see no reason why you should not get the same speed and power from the engine when running on the high gear, minus the little extra friction occasioned on the low speed with all gears of the epicyclic type. (2.) You can change the gear anywhere irrespective of the load. (3.) A gear is reliable if the principle of construction is sound. (4.) If you use a top gear, say, 4½ to 1, the low speed with the epicyclic type of gear in action would be 9 to 1.

Too Much Air.

Kindly enlighten me as to the cause of my machine not starting on the road. It is a 1909 3½ h.p. Peugeot, high-tension magneto, automatic inlet. After vigorous pedalling on the stand it will go all right. I have filed the platinum points, cleaned the carbon on the distributer disc and examined the wires. Also, why the platinum points must be flat, and how to get the machine to run slowly; it will run fast enough.—H.W.L.

The cause of the sluggish starting is due probably to the carburetter receiving too much air at slow speeds. (See the hints on Carburetter Adjustment in "Motor Cycles and How to Manage Them.") A good contact is not made unless the platinum points are flat: there is also a tendency for them to burn more easily. The fact that the machine will not run slowly confirms our theory that the carburetter is getting too much air. Try fitting a smaller choke tube to concentrate the air around the jet.

Semper Fidelis.

Hub and Crank Case Lubrication.

Would you favour me with a few instructions: I use Huile-de-Luxe for my engine. Could I not use this for both hub steering head, etc., as being better than ordinary thin cycle oil? Would an oil gun measure quantity to inject and force in Huile-de-Luxe (which is thicker, of course) better than a squirt? I believe the parts need a teaspoonful of oil to back and front hubs each 200 or 250 miles, and steering head similar. other parts rather less. Is the above about the right amount of oil, and is Huile-de-Luxe a suitable oil for cycle bearings? Could be slightly heated to thin it could it not, to get it in? Ordinary cycle oils seem so thin for a motor cycle. I see makers advice *re* draining crankcase and pouring a teacupful of paraffin through the hole in the engine-shaft. After doing should I pedal the engine round several times, with the oil drain plug in, or should the plug be out all the time, or in, while the paraffin is whirled round and out after to run off? Would three pumpsful of oil be sufficient before using again? The back tyre on my Triumph does not keep up many days—possibly valve leakage. If so, would a new rubber be the remedy? Can a valve leak from other causes than faulty rubber? I have an endless tube, but in the event of replacement a butt-ended one would save much labour. Do you recommend the Michelin butt-ended tube? Should the back tyre always be as hard as one can pump it—quite board hard.—A.L.M.

The oil you need for the hubs is Price's special hub lubricant. The hub should be filled completely with the lubricant when it will need no more attention for a long time to come. The supplier of the oil will send you full particulars together with instructions, if you ask them. The oil is first warmed and then injected out of an ordinary oil can. No squirt or oil gun is necessary. Yes; you can quite well inject oil through the hollow shaft, or, would be easier—as to get it through this portion you would have to tilt up the machine—would be to disconnect the union from the pump to the crank case, and pour the paraffin in through there. Then pedal the engine round until the paraffin is well splashed about, leave it for a few

nutes, afterwards taking out the drain g. letting the paraffin run out. ree pumpsful of oil should be in- ted before starting the engine after s has been done. A new rubber uld quite cure the trouble. Also that the washers and valve are nd. Why not try a detachable-ended e? The make mentioned is quite isfactory. They are quite easily ed, and are air-tight. The back e need not be board hard for com- table riding.

Difficulty in Starting.

I have a 3½ h.p. 1910 motor cycle, J.A.P. engine, and after I allow it to cool I have great difficulty in starting again. I usually have to inject about alf a wineglassful of petrol into the ylinder before I can get up sufficient peed for it to fire, even when I have on the stand. It runs splendidly nd pulls well once I get it going, ut I feel there is something not ght about it, and would be glad your assistance in the matter.—L.V.M.

do not say if the trouble is due he congealing of the oil or merely defective carburetter adjustment. seems more likely to be the latter. ing the winter months less air is uired than in hot weather. If you e off all the air at starting, flood carburetter well, see that the king plug points are $\frac{1}{25}$in. apart, advance the spark nearly fully (if neto) the machine should get away out difficulty. Do not inject so h petrol at starting. It is liable to e a seizure, and may even account the engine being difficult to start. a very small quantity of paraffin ead of petrol.

An Alarming Incident.

I beg to place before you the following details of an occurrence with an 8 h.p. motor cycle recently. A new 8 h.p. machine was bought by friend of mine a day or two ago, t after charging up and starting the first explosion set the whole achine in a blaze. Putting things gether ourselves, we imagined that explosion took place in one linder, but failed to overcome mpression on the other cylinder. d the fired charge passed through e re-opening inlet valve into the rburetter, setting it on fire. hen taking up the matter with e makers of the machine, they ite that they cannot at all ount for it catching fire. They d never once had a machine ch fire in the whole of their perience, and could only think t the carburetter had been oded and there was a considerable ount of loose petrol leaking from rburetter, but my friend said this s not so as far as he could tell. We mitted the matter to the makers, d made the suggestion that gauze ght be fitted between the inlet t and the inlet pipe, but they lied that that was superfluous d undesirable. The whole inci- t was disquieting, and we should e your opinion and advice.—G.B.

We are inclined to think that the inlet valve of your engine must have stuck in the guide and so allowed flame to pass into the carburetter. It is most unusual for an accident of this kind to take place, but it is known to happen in factories occasionally when machines are being tested. It is a most difficult thing to explain; in fact, any manufacturer will tell you that it is possible to have a blaze of this kind without exactly knowing why it has taken place. Of course, if the carburetter was over-flooded and wet petrol was all about, the slightest back flame along the inlet pipe would cause a fire. If the mixture is too weak and the charge burns slowly, it has been known to travel along the inlet pipe and set fire to the incoming charge, but it seldom results in a conflagration.

Adjustment of Valves.

I own a 1909 P. and M. (bought new), which has run about 3,000 miles. The power having fallen off slightly, I removed valves, and find exhaust wants grinding. I wish to enquire *re* inlet valve (a.i.v.). This seems to have worn considerably. The seating is all right, and has a side play of over $\frac{1}{16}$in. in its guide; the guide, valve stem, and cotter are all worn. The opening of valve is now something over $\frac{3}{16}$in. instead of the usual $\frac{1}{8}$in. allowed. Does either the side play or increased amount of opening materially affect the power? Same applies to exhaust guide, which is a little worn. I have fitted now a new inlet valve, but have not thought fit to scrap the other.—S.J.F.

It does not so much matter about the side play as about the increased amount of opening. What you should do now is to insert a washer over the collar of the valve, so that the opening is restricted to the original amount. Variation of the opening and loss of tension of the spring considerably affect the power. It would be better to have the exhaust valve guide replaced.

Airsprings. Belt-drive, etc.

(1.) What advantage have air springs over the present springs used on motor bicycles? (2.) Is a free engine and clutch reliable for starting from the kerb? (3.) What advantage has a belt-driven machine over a chain-driven one? (4.) Are studded covers considered the best for motor bicycles?—A.P.S.

(1.) Air is a more elastic medium than metal springs for insulating the rider from road vibration. (2.) A good free engine clutch can be relied upon to start a single motor bicycle and rider even on a fair gradient. (3.) Belt transmission is more elastic and softer in action than a rigid chain drive, but chain drives fitted with slipping clutches are almost as soft in their action as a belt. (4.) Rubber-studded covers are considered the best all-round tyres for motor bicycles. They do not slip on stone setts, whereas steel-studded tyres, although quite the best anti-skid devices for macadam surfaces, will slip on stone setts.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"K.B." (Nottingham). N.A.B. seat-pillar and F.R.S. 1911 lamp.

"Quad" (Newport). L.M.C. Auto-varia pulley. Is any trouble caused through slackness of belt when the lower ratios are in use?

"W.R.S." (Kennington). 3½ h.p. Lincoln Elk. Condition and hill-climbing capabilities after twelve months' use.

"J.A." (Eccles). 2¼ h.p. Royal Enfield lightweight. Reliability and durability of engine.

"P.Q." (Stratford-on-Avon). Wired-on tyres for touring purposes. Are they more difficult to detach, and can they be recommended for sidecar work?

"R.W." (Malvern). Do belt rims spoked to the wheel rim ever give trouble through breakage?

"G.S." (Ilford). Triumph single gear with sidecar.

An awkward predicament. Examining the licence.

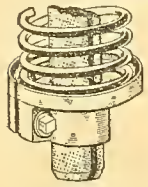
Twin Norton Withdrawn.

Owing to pressure of orders, Norton motor cycles are only to be made in single-cylinder models for the time being.

Similarity of Names.

Douglas Bros., of Bristol, request us to point out that they are in no way connected with the firm of Douglas and Oliver, Ltd.

A Valve Spring Tensioner.



Condor valve spring tensioner.

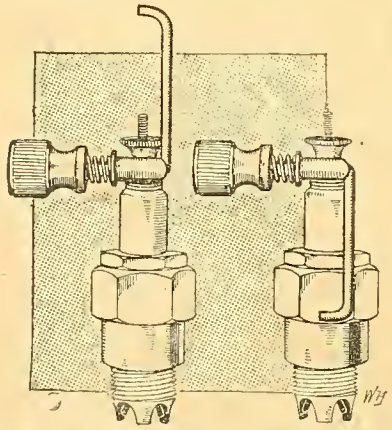
The Motor Accessories Depot, Broad Street, Coventry, send us an illustration of an adjustable valve spring cup that they have used on their Condor engines for the past twelve months. The sketch is self-explanatory.

New Varnishes.

Messrs. Conrad Wm. Schmidt, Stratford, E., have introduced a varnish, to which they have given the name of "Antarnish." It is transparent, and when applied to plating covers the polished nickel with a thin, smooth skin, which keeps the article bright and free from rust. It is unaffected by heat or damp, and may be removed with the aid of methylated spirits. A black opaque varnish is also sold which has exactly the same effect. It sets in about ten minutes and becomes properly hard in an hour. The varnishes are sold by Messrs. A. W. Gamage, Ltd., and the Service Co., Ltd.

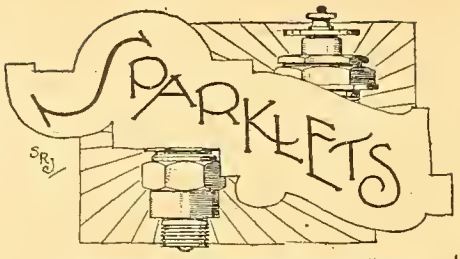
A Simple Cut-out Switch.

The Tingye cut-out switch fits on the sparking plug terminal, and is of the simplest description, consisting of four parts—the insulated handle, the cut-out wire, spring, and clip—and it is practically impossible for anything to go wrong with it. Turned upwards or downwards the coil spring and two indentations on the clip prevent the wire



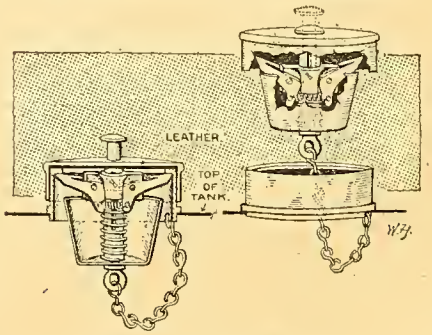
The Tingye cut-out switch. Left (on), right (off) position.

moving through vibration.. In the case of twin and four cylinders it is most useful for tuning up purposes, and even riders of single-cylinder machines will find it of service. The Tingye cut-out switch is sold by Brown Bros., Ltd., Newman Street, Oxford Street, W.



A Quickly Detachable Filler Cap.

One of the simplest and most practical quickly detachable filler caps has just been put on the market by Rotherham and Sons, Ltd., Coventry. Mounted on a hollow pin on the centre of the cap is a slide carrying two spring controlled levers. The top of the slide extends through the cap and ends in a push button. To lift off the cap all that is necessary is to push the button when the cap is free, and to replace it



Rotherham's new tank filler cap.

the button is pushed right down, the cap dropped over the filler, and the button released. The device is simplicity itself, and the cap cannot be lost, as it is attached to the filler by a short chain.

Rear Reflex Lights.

In the extracts from the report of the Expert and Technical Committee of the R.A.C. on "Tests of Reflex Rear Lights," published on the 23rd ult., two of Lea's reflex lights were referred to in the report as the Lea-Francis reflex lights. Components, Ltd., Bournbrook, Birmingham, who are the sole licensees of Lea's reflex lights (referred to in the report as being distinguishable at a distance of 130 yards), inform us that they have been compelled to introduce, owing to the public demand for cheapness, what they have christened the "Substitute" light, which is sold at about half the price of the original, but is admitted by its makers to be practically worthless. When it is considered that the patent reflex light is an expensive thing to make on account of accurate lenses and first-class workmanship, it is astonishing that it can be sold at such a low figure.

Catalogues Received.

The Bowden Album for 1911 is a bulky volume and contains particulars, prices, and illustrations of all the Bowden accessories made by Bowden Wire, Ltd., 37-41, Pratt Street, Camden Town, N.W. Pages 13 to 40 are chiefly occupied with the Bowden equipment for motor cycles. Motor cyclists wishing to convert lever and rod control systems to the Bowden mechanism can obtain a copy of the catalogue on application to the above address.

An exceedingly well-got-up booklet of Clyno single and twin-cylinder motor cycles has reached us from the makers. The testimonials reprinted in the brochure are evidence of the satisfaction the Clyno machine is giving. The inclusion of a priced list of parts to the smallest detail at the end of the book is a commendable practice.

We are in receipt of the well illustrated catalogue of Auto-Carriers Ltd., which gives much useful information concerning the "A.C." tricar. The matter contained in the catalogue is most useful to the purchaser as it answers satisfactorily a number of questions, such as—Is the vehicle a good hill-climber? petrol consumption control, protection of chains, sufficient engine power, side-slip, wear and accessibility of back tyre, and comfort. All these questions are answered by users themselves. which is extremely satisfactory.

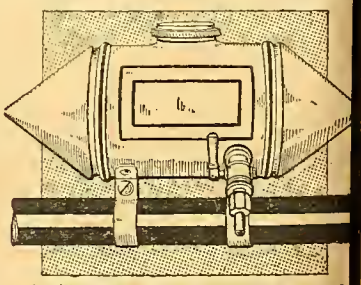
A well illustrated large-sized catalogue is to hand from the Quadrant Motor Cycles, 45-53, Lawley Street, Birmingham. This firm manufactures three separate models—the 2 h.p., the 3½ h.p., and the 4 h.p. passenger models. All are copiously illustrated both as regards the complete machine and details.

Scottish Tyre Depot.

So successful have the Hutchinson tyres been in Scotland, that the firm making them have opened a depot at 60 and 62, West Regent St., Glasgow.

Spare Petrol Tanks.

The small spare torpedo petrol tank which we illustrate herewith is the production of the Belgrave Garage, Spring Vale, Bristol Street, Birmingham, one of the partners in which is Mr. H. C. Pickering, a well-known Midland motor cyclist. It is provided with a good sized filler cap, and a tap and union connect it to the main petrol reservoir. The handle of the tap is wisely made to shut off when downwards. The tank is finished in several different colours to match popular makes of machines, and is



Auxiliary petrol tank attached to top tube.

at a reasonable price. Competitors in the M.C.C. and other non-stop competitions where the petrol tanks can be refilled will find this a useful article. At the same time it does not detract in any way from the general appearance of the machine.

THE MOTOR CYCLE

Vol. 9. No. 416. Mar. 16th, 1911.

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

The Trade and the Trials.

ON page 244 of our last issue it was mentioned that the Traders' Union had confirmed its decision not to support future quarterly trials. The highly successful January quarterly trials proved that the trade was by no means unanimous on the subject, as in these trials several well-known firms took part. To boycott the quarterlies completely would be sheer injustice, as no newcomer, large or small, would have a chance of showing how his machine behaved sufficiently early in the year to be of real use to him. Although the council of the Traders' Union have confirmed their decision, the lack of complete unanimity shown by the last trial and the decision of two firms represented on the council to continue to compete, is proof that the council were wise to content themselves with a confirmation of the resolution without making it compulsory for members to abstain. In other words, while they are opposed to quarterly trials they do not ban them.

We will now consider the trade point of view. Firstly, a one day's run was considered to be an inadequate test; secondly, the course was said to be too easy; thirdly, the advantages gained did not justify the expenditure; lastly, the element of chance could not be eliminated, and the risk of a competing machine being thrown out by a trivial misadventure was not worth taking.

Take the first objection and the second, which run closely upon it. The Uxbridge-Banbury course is clearly too easy, but not sufficiently so to allow every competitor to finish with a clean sheet. In fine weather the performance presented no real difficulties, but in wet weather, as was shown in October, the results were different, and it is not going too far to say that more convincing proof is wanted of the go-anywhere-in-any-weather capabilities of the average motor cycle.

The selection of a stiffer course in the South last January had the desired effect, and even though the weather conditions were perfect for the time of year the percentage of failures was quite high enough. The third objection—the advantages gained did not justify the expenditure—is of doubtful worth, seeing that different courses are being selected for this year's trials, and new fields are constantly being opened up and interest aroused as a result. Even for those makers whose reputation is made the argument is not irrefutable, but to manufacturers of new models and to newcomers into the business the quarterly trials are undoubtedly of inestimable value. The trade does not seem to have realised that the buying public regards the quarterly trials as of great importance. The last objection is a sound one and cannot be refuted. He who enters must take his chance. Fortune is a fickle goddess, and the element of luck can never be entirely ignored.

The new course selected for the spring quarterly trial is a severe one, embracing three or four noted Yorkshire acclivities, and it is to be hoped that even more members of the trade will compete in this event than in the January one. Not only will the successful competitors have just reason to be proud if they get through, but they will receive a good training for the six days' trials in August.

We sincerely hope that those who have not devoted much thought to the matter will give it their most careful consideration before deciding not to enter for the spring quarterly trials to be held in Yorkshire on Saturday, April 22nd.

THE A.C.U. SIX DAYS' TRIAL.

DESCRIPTION OF THE ROUTE.

WE were enabled to publish a fortnight ago a map of the route which will be covered in the Auto Cycle Union Six Days Trial, which will commence on August 14th and terminate on the 19th. The centre chosen is Harrogate, which is admirably situated close to the most attractive part of Yorkshire, near the most populated portions of the county, and yet the route avoids the large towns, York being traversed only three times in the six days.

Harrogate also possesses the advantage of possessing numerous hotels, and is a town which has little bad traffic, and there are no tramlines.

As regards severity this course will easily excel any other ever utilised by the Auto Cycle Union, as may be seen by the number of times the words hill-climb appear in the map. This does not necessarily mean that there will be a timed hill-climb every day, but that the A.C.U. has a choice from which it can easily make a selection.

First Day, August 14th, 177⅞ Miles.

This route becomes interesting after Thirsk—there is a small amount of by-road to be traversed before Coxwold is reached. The ruins of Byland Abbey are passed, and then Wass Bank is ascended, a magnificent wooded ravine with a maximum gradient of 1 in 4½. The surface towards the top is rather rough. The road after Helmsley passes through Pickering, where there is an ancient castle, and continues over moorland to Whitby, and near the latter town there are splendid views of the sea. St. Hilda's Abbey is seen on the cliffs. The coast ride to Saltburn will prove a trying test. The contour road book refers to it as being beset with a series of "impossible hills," Lythe Bank, Sandsend, being one of the most severe.

All is plain sailing through Guisborough right down to Thirsk, which is again traversed, and Sutton Bank is next ascended. The road after Helmsley to Shillington is good, but thereafter ensues a run across country to Boroughbridge, whence a good road leads back to Harrogate. The Quarterly Trials course covers most of the first day's route, and will give those who enter an idea of what may be expected in the Six Days' Trial for five consecutive days.

Second Day, August 15th, 170⅜ Miles.

After Tanfield, picturesquely situated on the River Ure, there is a stiff pull out of the village, while a little further on are the ruins of Jervaulx Abbey (of Ivanhoe fame) and Middleham Castle. From Reeth there is a gradual climb up the Arkengarthdale Valley, with a stiff ascent at Arkle Town. The country is desolate moorland.

After Kirkby Stephen and Appleby the road to Nateby becomes rough, but improves after Moorcock Inn. The scenery is excellent. Wild Boar Fell is on the right (2,323ft.) and Shurnor Fell (2,346ft.) is on the left. Lammerside and Pendragon Castles are by the roadside. After leaving Aisgill, a few miles before reaching the Moorcock Inn, the road runs along the Midland line past the scene of the recent railway disaster. At Redmire the old road over Scarth Nick is grass-grown but rideable, gradient 1 in 4 to 1 in 5.

From Bedale to Boroughbridge and on to Harrogate there are no further difficulties.

Third Day, August 16th, 200½ Miles.

This will be a long trying day. Several steep hills will be included. Garrowby Hill, shortly after York, which, by the way must be traversed twice in the day, while after Skipsea right up to High Hawsker the road skirts the coast. South of the latter place is Stonpe Brow, which is a severe ascent, while the third stiff hill is Staxton Brow. Thereafter the road presents no difficulties.

Fourth Day, August 17th, 167¼ Miles.

On approaching Ripon a magnificent view of the cathedral is seen. The road to Pateley over the moor is good, while there is a steep ascent after crossing the River Skell. The famous ruins of Fountains Abbey are situated a few miles lower down the river.

We are now in intensely interesting country. The fantastic outline of the Brimham Rocks is to be seen on the hill on the left. There is a steep ascent and descent to Pateley Bridge. The scenery is beautiful and the country—the home of Euge Aram—is famous for its caves, underground streams, a potholes (not the ordinary road variety with which the read is familiar, but deep holes with underground streams pen trating hundreds of feet into the earth).

The famous Greenhow Hill is over three miles in lengt and has gradients of 1 in 5 in places. Near Grassington a the famous Stump Cross Caves, which are said to exte thirteen miles underground. The mountain views a magnificent.

After the steep ascent out of Grassington the road is poo but improves further on, while the scenery on to Sett leaves nothing to be desired. From Settle on to Ribblehe the road is rough and narrow, with steep hills and sudd curves, and in the adjoining district potholes abound—o known as Gaping Gill is over 400ft. in depth.

From Hawes to Aysgarth the road is good, and there fine scenery through the Wensleydale. After Kidstones t road is rough for about 500 yards up to the summ The gradient varies from 1 in 4 to 1 in 5. The scenery co tinues to be beautiful during the descent to Buckden, wh the villages of Starbottom and Kettlewell are interesting. are the overhanging cliffs at Kilnsey. Burnsall is said to the prettiest village in Yorkshire.

There is a long ascent out of Burnsall ending in a st pull through a wood on the fell side; the surface is excelle The ruins of Barden are seen by the roadside, the Ri Wharfe is hidden from view in the Bolton woods, and t famous whirlpool, the Strid, is close below. From here Bolton is the finest scenery in any of the Yorkshire dales.

After the long descent to Bolton Abbey there is a striki view of the Abbey ruins. The ancient priory of Bolton said to have been built by Lady Alice Romille, in memo of her son ("The Young Romilly" of Wordsworth's poe who was accidentally drowned in the Wharfe in attempti to cross the Strid during the chase.

The road to Blubberhouses is excellent, though it clim for four miles to a height of 949ft. to the summit on K Gill Moor. Then follows a long descent through a fir wo ravine to Blubberhouses (Blue berry houses). Sharp turn the right by the little church on the hill, with a sudden ste ascent of 1 in 5, and about two miles further on anot stiff climb to the summit of Askwith Moor, 897ft. Af Otley, views of Lindley reservoir, where torpedoes are test may be seen. Norwood Edge includes a gradient of 1 in The road continues up a fairly stiff pull to Harrogate.

Fifth Day, August 18th, 191¾ Miles.

After Tadcaster there is a fine road through Boston S Ilkley is a village of great antiquity famous for its medici wells. The next item of interest is a fine ascent over g roads for about two miles to Rombald Moor, 1,247ft. (1 5 and 6). The descent into Airedale is rough, but the r from Moreton into Bingley and on to Saltaire is good.

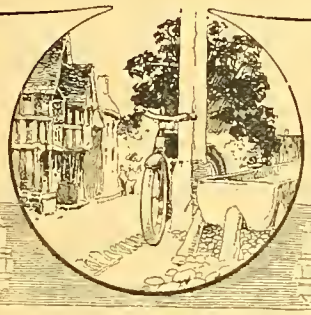
Tramlines are encountered at Nab Wood. The ascent Moorhead lane entails a sharp left-hand curve and a gradi of 1 in 5, while a gradient of 1 in 4 is to be found in Hea Woods. There is a precipitous descent to Haworth Stati and a stiff pull up out of the latter village, the home of Brontës. From Colne to Gisburn the road is fair.

Near Bolton, Pendle hill on the left (1,831ft.) was sacred hill on which the priests offered sacrifices to B long years ago. Settle is finely situated on the main r to the North. The road to Hellifield is good, and fart on more interesting country abounding in caves is travers Towards the end of the day the ascent from Appletreew (1 in 6) and the beauties of Skyreholme Valley (1 in 6) encountered, while Brownstay Ridge (1 in 5) is anot steep climb. After Masham nothing of interest occurs Harrogate is reached.

Sixth Day, August 19th, 98¾ Miles.

This journey presents no difficulties and is an easy ru almost a "rest" after the arduous experiences of previous five days. The beauties of the country, the seve of the test, and the fact that it taps a district almost known to Southern and Midland riders, should attrac large entry. The Auto Cycle Union deserves congratulat on its selection, and owes its thanks to those who have b instrumental in placing this course before them.

The Motor Cycle for Military Purposes



DURING the past year there has been a considerable number of attempts to discover the true value of motor cycles for military purposes. s has generally taken the form of despatch riding, er from one staff to another or from outlying patrols eadquarters, and in every case those motor cycles h were used have been of the ordinary standard . It would perhaps be interesting to investigate far this design of machine is likely to be of service ctual warfare, and for this purpose it is necessary xamine the peculiar conditions under which such hines will be required to operate, together with the s which have been taken to meet similar conditions her arms of the service.

Interchangeability.

is essential that any military vehicle, whatever its may be, should have every part interchangeable a similar part on a corresponding vehicle, and this change should be made with the minimum tity of tools, so that it behoves that part to fit in ue engineering sense, that is to say, out of a com- set of spare parts the actual machine must be ed without any form of fitting being allowed. is necessary, because it is unlikely that the section r vehicle will be in the neighbourhood when most red, rendering it necessary to repair one damaged ine with parts from another which may have been ered useless previously. Moreover, this form of r must be speedy, as it is under most circumstances ssible to return a machine s repairing base.

regards the actual service rements, there must be a ity for travelling over ourable ground, fording rivers in the absence of a bridge, and an ability to withstand very rough usage coupled with continual exposure to inclement weather. Silence is of great value should reconnoitring be considered, in which case travelling away from the road again becomes necessary, while in despatch carrying, steadiness on a road which may be badly cut up by heavy guns and transport is essential.

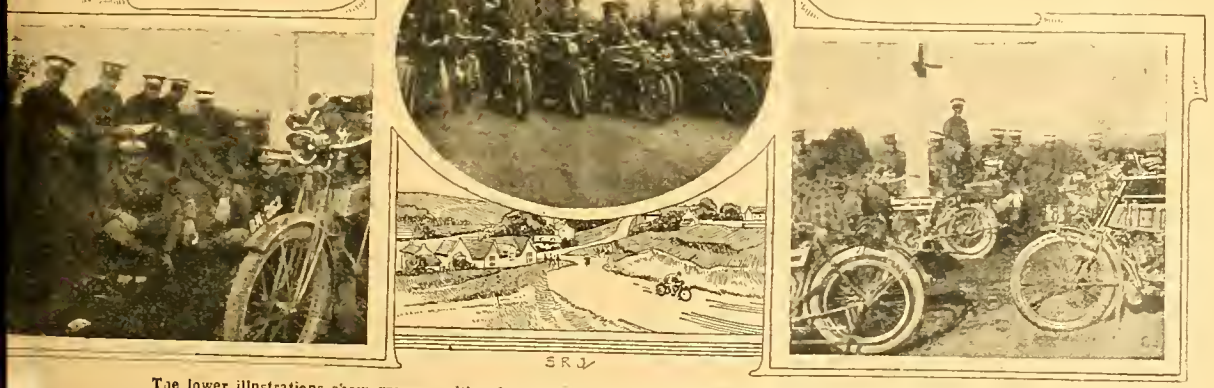
Under these two heads, the first is an unlikely employment for motor cycles, because a two-wheeled vehicle is unsuitable when off the road, even at its best; the necessary quietness is unlikely to be obtained and great speed of no very certain value.

Despatch Riding.

The second duty, namely, despatch riding, is not likely to be filled by the present form of motor bicycle, because the difficulty in connection with a cut-up road, more especially at night when no lights can be used, is very real, and such roads are inevitable in the rear of an advancing force. Again the necessity for leaving the road crops up, as the officer to whom a message may be sent will most probably be located in a position away from the road, under which circumstances a machine weighing some 200 lbs. would have to be pushed an uncertain distance by a rider whose kit is far from light, which is not a pleasurable matter, especially when occurring a number of times.

On mounted infantry lines there may be some hope that motor cycles may be used, since fewer men need be left to guard the machines, and a stronger firing line, dependent, of course, on the ability of the machines to traverse such country as may intervene before their position

MILITARY MOTOR CYCLISTS.
A detachment of M.U. motor cyclists ready to move off for duty.



The lower illustrations show groups waiting for despatches on the occasion of last year's army manœuvres.

The Motor Cycle for Military Purposes.—

is reached, while the bad roads would interfere as before.

All of these difficulties must be considered and finally overcome before the formation of a motor cycle mounted corps can be realised, and on the formation of this arm rests the solution of the spare part difficulty, since otherwise machines are not likely to be of the same type and manufacture.

Peace and War Conditions.

It is an easy and pleasant matter to use motor cycles under peace conditions, but it is a very different thing when actual warfare is considered. Even in peace manœuvres there are moments when all is not joy, such as pushing a machine across a field of long grass, or up part of a steep hill honeycombed with rabbit holes and strewn with sharp empty cartridges.

The suggestion that a machine and its rider should betake themselves across a stream of unknown depth because the only available bridge is officially "blown up" is not likely to be received with undue inward pleasure, yet in reality they would be as often called upon to do so as guns and waggons have been in the past when a bridge has actually been demolished.

It has been found necessary to design even the lightest machine gun carriage in a special manner capable of withstanding usage of the roughest description the abnormal stresses consequent thereon, and construct it so that from a heap composed of the parts of any two carriages one can be erected without extra fitting. In view of these facts, the suitability of the touring type of mount is not very apparent.

Despatch Riders and Police Work.

Some use might be discovered at the base of operations for despatch riders or police work, because it is likely that the roads in such parts will have been repaired and suitable temporary bridges erected, thus eliminating the need for any departure from the road.

Service conditions would seem best satisfied with a machine which has been designed by men who possess a knowledge of army vehicle design, as well as the necessary for the motor cycle. But whatever conclusions may be formed of touring motor cyclists, their efficiency will be considerably impaired should the machine differ in any feature of design.

In conclusion, it is necessary for a service machine to be of use under all conditions of either road or weather, since a machine which may be used one day and useless another is totally unserviceable, however great its efficiency may be under favourable conditions.

A MOONLIT LANDSCAPE. An impression of an evening spin in March.

A NATIONAL MEMORIAL TO KING EDWARD.

THE older of our readers will remember the National Cycle Show at the Crystal Palace, at which many a motor cyclist served his novitiate by taking a trial run on the Terrace. Apart from its accessibility, the Crystal Palace was indeed a pleasant place in which to hold the show. Many were the interesting machines to be seen in those days.

We well remember the enthusiasm displayed over such machines as the Phœnix Trimo in 1902, the rival Phœnix Trimo with the sidecar in 1903, the first appearance of the four-cylinder F.N. and the tremendous rush there was to ride it, the Auto-Fauteuil (which was the prototype of the T.A.C.), and the Singer with engine and magneto in the back wh

The poor Crystal Palace is now in a sad way, a happy idea has been put forward to restore it worthy memorial to our late beloved King, an preserve it and its magnificent grounds. It is fu proposed that a high speed electric railway shoul constructed from town to reach the Palace w fifteen minutes. The author of the scheme is Right Hon. Lord Tenterden, the hon. treasur the Right Hon. the Earl of Kinnoull, and memorial offices are at 26, Shaftesbury Avenue. One guinea subscribers will receive a free life a sion ticket.

LEADING MOTOR CYCLE CLUBS

George S. Dalton, a founder member

Norman Macmillan, president.

No. 9.—EDINBURGH MOTOR CYCLING CLUB.

THIS club is one of the oldest in Scotland, being founded in 1905, and is certainly the best known and most enterprising north of Tweed.

The club was started by a few keen motor cyclists under the name of the Meadin M.C.C., and in the first year its active life carried out only two competitions—a hill climb and 100 miles in reliability trial (the first ever held in Scotland), which event created great interest, as upwards of twenty motor cyclists started, the winner being the late Dan Paterson. From this the club never looked back. The first year's membership was 16, and in the following year this number was exactly doubled, and in 1908 again doubled, bringing the membership up to 66. In 1908 the name of the club was changed to Edinburgh M.C.C. to give it a little more distinction. During these two years Mr. C. Gregor carried out the duties of secretary with considerable ability, and great credit is due to him for making the club a live one.

In the following year Mr. Alan Watson took up the arduous work of secretary, and it was in this year that the club organised the much criticised but very successful Scottish trials. These trials have now been held for two consecutive years with conspicuous success; the conditions are enormously severe, which detract somewhat from the entry, but add to the real value of the event.

During 1909 the membership increased to 96, and towards the end of the season the Trials Committee decided to hold an open hill climb on Amulree—a hill that had proved the undoing of all the competitors in the first Scottish trials. This event attracted the very large entry of fifty, several well-known English trade riders competing, and the contest was carried out successfully under adverse weather conditions.

In 1910 the trials secretary of the previous year, Mr. Percy Tolfree, was appointed to the dual office of secretary and treasurer, being ably supported by Mr. R. J. Good as trials secretary. The president (Mr. Norman Macmillan) has now held the position for three consecutive years, and he fills the office with dignity and grace.

During the past year considerable lack of interest has been apparent in competitions, doubtless due to the fact that a large number of events have been held by various other clubs. The committee, with several kindred spirits, determined upon the formation of a social club. The acquisition of suitable club premises would largely encourage the social side of motor cycling and greatly benefit the sport by bringing members together more frequently, especially during the winter months, when motor cycle clubs are usually disbanded—or practically so. The scheme is now taking practical shape.

Percy E. Toltree, hon. sec.

Campbell McGregor, one of the original founders.

R. J. Good, trials hon. sec.

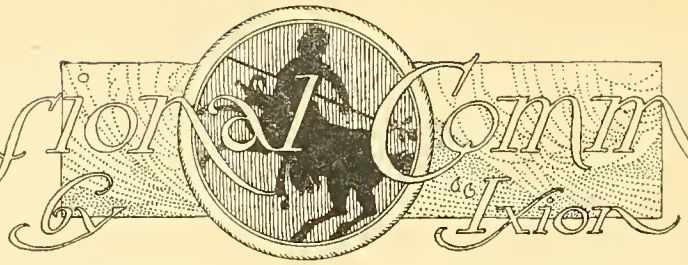
THE MOTOR CYCLE IN GERMANY.

A TEUTON'S VIEW OF THE INDUSTRY AND PASTIME.

A WRITER in a German technical weekly deals with the dwindling interest manifested in motor cycling as a sport and pastime in Germany, notwithstanding that during the last decade, which may be said to cover the development of the motor cycle from a practical standpoint, so many improvements have been effected in this class of machine, and that in England and the United States, for instance, the interest is deepening and widening. That motor cycling in Germany has lost the popularity which it erstwhile possessed for a time period is incontestable. Why? Cannot Germany produce machines that in price, design, and quality, stand on an equality with some leading British makes? She can and does produce them, and only a needlessly insular prejudice would answer in the negative. As a matter of fact, England is Germany's best customer for the motor cycle; witness the official trade statistics, which show that the British market absorbed one-sixth of the machines exported by Germany in 1910. As the machines are not at fault, an explanation of the decline must be sought elsewhere. The writer finds the main reason in the Teuton himself, "who, generally speaking, wants much, and has little to spare for taking care of his motor cycle." Like Kipling's Mulholland, who "wanted to preach religion, handsome and out of the wet," the German enthusiasm for the pleasures of motor cycling fizzles out under its exactions. Still, although the term "exactions" may stand in one sense where an American or Englishman is concerned, it lies open to objection in another, since—again quoting the German writer—"an Englishman loves his machine, studies it intently in all its details, and never grows weary of it when he has to hunt up the cause of some mechanical trouble or another." That remark holds good for cars as well. In a general way the German lacks the sporting spirit of the Englishman, nor has he, we think, the Briton's self-reliance and mechanical ingenuity—three qualities more or less indispensable for the spread of motor cycling.

The German schoolboy cultivates no sport worthy of the name; while as to the "pastimes" of the German "Couleur-Studenten," the less said of them the better; hence there is a sort of national paralysis in the region of sport, the youths being fathers to the men. Such conditions prevailing in Germany, great things, as regards the popularisation of motor cycling, are not likely to result even from the recently formed "Wissentschaftlich-technische Kommission zur Weiterentwickelung des Kraftrades und seiner Verbreitung" (Scientific-technical Commission for the Further Development of the Motor Cycle and its Popularisation), in which the German War Office is interested, and for which the German Motorfahrer-Vereingung (Motorists' and Motor Cyclists' Association) has voted £300 out of its present funds. Of course, it is scarcely needful to remark that the German War Office does not care a red cent about the development of motor cycling *per se;* all the Office is interested in are the potentialities of the self-propelled machine as an instrument of war, and the probable net outcome of the Commission's labours will be a standard type of military machine.

Occasional Comment



More Colonial Demands.

The inundation of colonial letters continues, but on the whole fails to illuminate many new points. One novelty is a request for high footrests or footboards, as low patterns are not infrequently struck by boulders, the sides of ruts, etc., and are carried away. The main complaints have reference to the weakness of handlebars, forks, rims, spokes, saddles, and carriers.

The correspondent who dislikes a high clearance is in a lonely minority. He asserts that a good steersman should be able to dodge the colonial substitute for the upstanding brick; but does one never ride at night except in England? Or is there a special breed of head lamp across the seas which sheds its brightest rays six inches in front of the wheel.

Most of my correspondents would prefer a greatly increased ground clearance if they could obtain it apart from too lofty a saddle position.

Strange Noises.

The average standard modern motor cycle is literally silent when it is throttled down to a low speed. Nothing is audible save the suck of the carburetter and the faint clatter of the buffered valve tappets. Hence a new type of query has arisen to bother us "repairs by post" gentlemen of the press; quite a common type of letter invites me to analyse and rectify "an almost inaudible creak, occurring regularly at the same point of the piston stroke when my engine is running very slowly," etc., etc.

The office boy remarks in consequence that my temper is rapidly deteriorating. However, I find five out of six such annoyances are ascribable to an old magneto chain having worn out of pitch, so that new chains, and in one case new sprockets, were necessary. In another case the slight but haunting noise detected by a vigilant owner proved to be due to a damaged ball in the crankshaft races. This is refinement indeed. I was quite relieved to open a letter from some juvenile sportsman at Balham, containing the information that he had run down a dyer's handcart owing to the beastly silence of his engine, and could I recommend an exhaust whistle which *would blow with the cut-out open?* Perhaps some road-hog reader can oblige?

Tyre Troubles on Passenger Outfits.

I cannot help noticing how frequently a sequence of tyre troubles deface the racy accounts of passenger trips which occasionally adorn our pages. My passenger work has been gradually reduced to the minimum of late years, and I must confess to being a convinced soloist. But I keenly remember that in my sidecar, quadcar, and tricar days the driving tyres were responsible for 75% of my delays, nor have I forgotten how I eliminated the nuisance on a certain 4½ h.p. tricar of unhappy memory.

It was originally supplied with a light wheel carrying a so-called 2½in. double extra reinforced tread. In actual practice the sole difference between this tyre and a third rate 2in. sample of the kind then standard on motor bicycle rear wheels was that it cost more and burst sooner. After many expensive and exasperating stoppages, I took the bull by the horns. I scrapped the entire wheel, bought a strong rim from a tyre firm, had it built up into a new wheel with spokes as stout as Sandow's ankle, and ended by running the machine two years without a puncture, and with but one serious deflation.

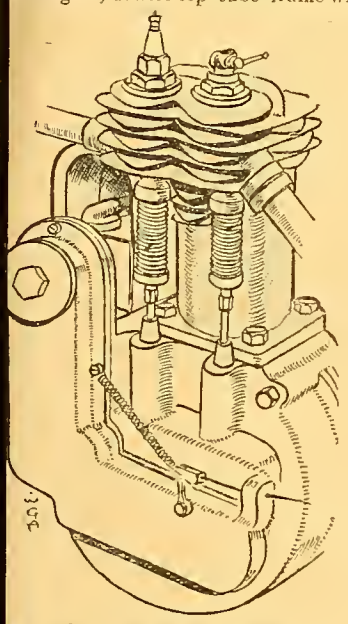
Hence I can commend the advice given by Mr. Oldman on page 211 in our issue of March 2nd. There is even a financial economy to fit a heavy passenger outfit with a light car wheel and cover; but in the present confusion of tyre and rim sizes, it is best to fix on a certain make of tyre, buy your rim from the tyre maker, and in future "use no other."

If the powers that be ever dispatch me to a foreign country, I shall follow the same procedure with my solo mounts.

WARMINGTON HILL, a well-known Warwickshire test grade on the range Edge Hills. This photograph shows an instance where motor cyclists shou drive considerately, especially on Sundays during the hours of Divine servic Loth as we are to admit it, a certain section of riders are most thoughtless in su circumstances, and race along, sometimes with throttle and cut-out wide ope entirely disregardful of the proximity of churches.

DETAILS OF THE STANDARD 3½ h.p. JAMES.

E recently had an opportunity of examining a latest 3½ h.p. diamond frame James, which is likely to enhance the already reputation its makers have for clean n and fine finish. In common with standard model machines, it has a cal engine, double top tube frame with



nes engine showing gear-driven magneto.

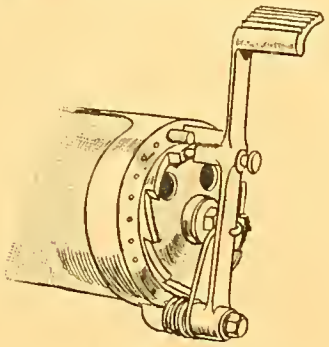
between, but it comprises several sting features which tend to lift it of the ruck." First of all with to the engine. This differs in two d particulars from the ordinary having the staggered radiator fins characterise all the James engines, n addition, a quite individual magdrive. The Bosch magneto is sup- on a platform, behind the cylinst integral with the crank chamber, s driven by a train of pinions ed within an L shaped aluminium which also forms the cover of the gear. For the purpose of removing the magneto altogether, or altering the timing, means are provided for getting to the pinion on the magneto armature-shaft, and consist of a large cap which screws into the cover over this pinion.

It may be urged that the magneto is a trifle too close to the engine, and therefore liable to get rather hot during a long uninterrupted run, but against this must certainly be put the facts that it is certainly well sheltered and out of the way of mud and dust.

The engine has a bore and stroke of 86 × 96 mm. respectively, and is fed by a Brown and Barlow carburetter, which is situated behind and to one side of the magneto. A Blumfield variable pulley is fitted, and the lubrication is on the drip feed principle by an inclined Best and Lloyd pump contained in the forward compartment of the tank.

The stand, which is of the usual "kick-up" variety, is most neatly fitted, special lugs being attached to the chain stays for this purpose, which allow all parts of the back wheel to be got at without difficulty.

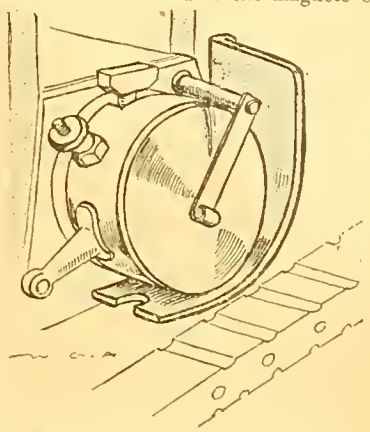
A decidedly neat and effective silencer cut-out is fitted adjacent to the front footrests, and within comfortable reach of the rider's foot. The cut-out works on



James' silencer cut-out.

the ratchet principle, and each alternate stroke of the pedal opens or closes the cut-out apertures in the silencer ends. The pedal is loaded with a spring which returns it always to its original position, as is also the plunger-pawl. The only criticism which we can offer against this device is that there seems to be a large number of holes and corners involved, which, being unprotected, are liable to collect dirt, and it would be an improvement, we think, to fit the cut-out mechanism on the inside of the silencer end plate, and so protect it from dirt.

Another neat little fitting is that of a small shield attached to the magneto end



Belt shield protecting the contact breaker.

plate, in order to protect the contact breaker journal from grit and wet thrown off the belt, which passes in close proximity to it. This shield is made of cast aluminium, and is fitted in a very simple manner. At the same time it does not rob the contact breaker of any of its accessibility.

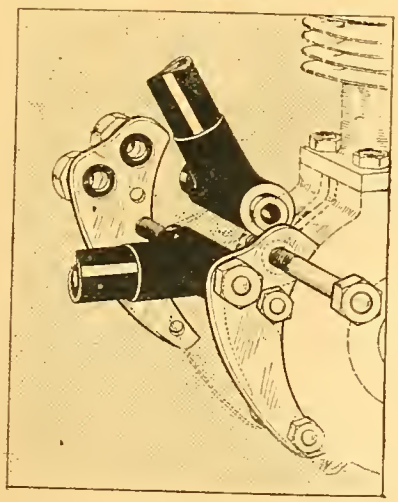
Nicely finished in blue-grey enamel, the 3½ h.p. James certainly has a most pleasing and workmanlike appearance, which should stand a lot of mudplugging without looking too utterly unpresentable. The riding position is most comfortable, a change of position being provided by employing two sets of rubber covered footrests.

The machine is the production of one of the oldest and best makers of pedal cycles, the James Cycle Co., Ltd., Greet, near Birmingham.

PRECISION ENGINE

VO years ago a patent detachable motor cycle frame of the diamond pattern was devised by Mr. Harry Reed, of Manchester, ker of the Dot motor cycles. By tent method the front frame can arated from the rear portion without disturbing the power unit. To enable be done the chain stay-bridge and are designed to be made in a single , the T lug, etc., at the lower end seat tube being held between the plates by bolts. It is only natural ith the development in design, it ible for a designer unknowingly to an idea which has been patented, is was the case with the original on unit.

rs. F. E. Baker, Ltd., the makers Precision, had unwittingly made ngine plates and lugs in such a that they infringed Reed's patented



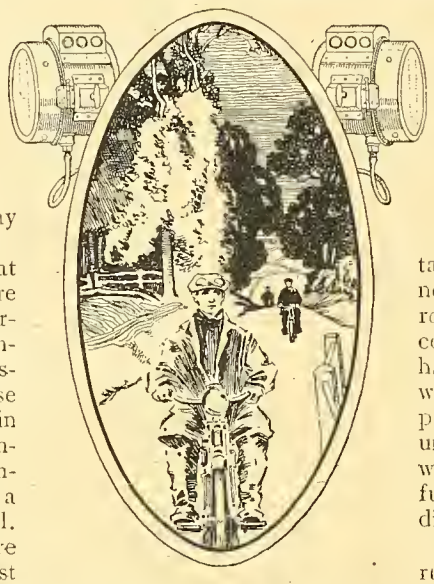
design referred to, and, having come to an amicable arrangement with the patentee, have placed before us their latest form of Precision engine plates and lugs. Although originally these plates were quite independent of the bracket or rear stays, they permitted the separating of the frame in the same manner as the Dot design. The new design engine plates are now counter bored, and projecting trunnions are provided on the lugs, as illustrated, consequently the frame cannot be taken apart without disturbing the power unit. The original desire, however, is in no way defeated by this alteration, as bottom bracket and seat-tube lug plates are still swivelling members, thus meeting the requirements of local assemblers, for whom Messrs. F. E. Baker specially cater. We illustrate the latest design of engine lugs and plates which will render our remarks quite clear.

LUGS AND PLATES.

THE INTER-CLUB TEAM TRIAL.

A Reply to Mr. Hooydonk's Article in our last issue.

I WAS particularly pleased to see Mr. J. Van Hooydonk's article inviting suggestions for the M.C.C. seventh (not eighth as stated) inter-club team trial for *The Motor Cycle* Cup, which is surely the finest possible way of still further popularising the event. As one who has taken part in the last four events, may I express my views?



I think it is generally admitted that in this year of grace the conditions are too simple. Firstly, pedalling is permitted; secondly, the course is comparatively easy; and, thirdly the distance is but 100 miles. If all these considerations received attention in framing the 1911 rules, and the conditions made more severe, the competition would, I feel sure, prove a more representative championship trial. I quite realise that all competitors are not fortunate enough to possess latest model motor cycles, but surely one of these days we shall have a rider pedal his machine to the finish with his engine firing every six revolutions, and his belt slipping abominably. Under present conditions it is possible, but would be distinctly unfair, for a team finishing in splendid order to be beaten by a team whose members could not complete another round without a stop owing to some derangement which they have managed to overcome by vigorous use of the pedals. Motor cycles incapable of climbing 1 in 10 without pedal assistance form a very small minority nowadays, so that they should not be considered so seriously as they have been in the past.

The Timing Method.

Riding to a chronograph held by a qualified timekeeper has been unfavourably criticised. Some competitors carry two watches and make a fine art of the regularity of running, other less fortunate competitors may possess a watch which happens to gain or lose a minute or two during the trial—result, loss of the cup. If reliability is to remain the outstanding feature of the trial, less importance should be attached to the riding to split seconds, but, if timing is to continue to decide the winner, it should be done by the competitor's own watch. Either of these alterations would make the event far more enjoyable and relieve the rider's mind of a big weight, but what I would urge still more is to start a little earlier, send the teams tying for first place round the course again, and let reliability of the motor cycle alone prove the deciding factor. I feel sure that the Bristol and Northamptonshire teams would have preferred this method of determining the winning team last year.

Of course, there is the chance that no competitor would drop out on the extra circuit, and so as to bring the trial to a definite conclusion, timing might well be employed on the final round. I am strongly against exact timekeeping being placed before reliability, as to my mind it places too much of the onus on the man, whereas the prolonged trial would serve further to test the machine. The same remarks apply to the proposed speed judging test and abolition of watches, which I do not favour.

A Longer and New Course Suggested.

A change in the course would certainly be welcomed, longer and over new ground, but if a short circuit route is again chosen, why not despatch competitors in the reverse direction at half distance? This little departure would relieve somewhat the tedious process of encircling the same course until it becomes really boring, and would, moreover, necessitate a watchful eye on unknown hills in the counter direction.

I entirely agree with keeping the rules as simple as possible and ignoring petrol consumption. I do, however, object to being made to carry a spare can of petrol round my neck just because the makers of my machine do not fit a tank large enough to make a hundred miles non-stop run beyond the possibility of doubt.

In conclusion may I suggest that the M.C.C. Committee present gold medals to the winning team in future. Surely vanquishers of eighteen teams comprising 108 riders are at least deserving of such an award along with a fifty guinea challenge cup.

Best luck to the competing teams, and let us hope that for once the Coventry and Warwickshire M.C. and the Motor Cycling Club—winners in the two previous contests—will, this year at any rate, be overthrown.

NON-STOP.

Northern League 1911 Programme.

AT the general meeting of the Northern League at York, the following fixtures were arranged to take place on the dates enumerated:

April 14th (Good Friday).—Annual meeting of Northern motor cycle clubs at Richmond, Yorks.

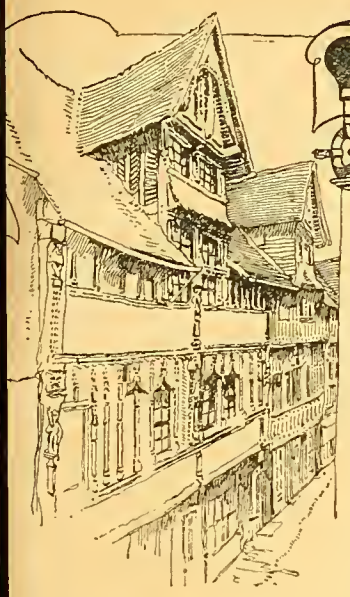
April 17th (Easter Monday).—Hill-climb at Staxton Brow, organised by the Scarborough and District M.C.C.

May 21st.—Individual reliability trial. To start from York, and the distance not to be less than 100 miles over a most difficult course.

June 10th.—Speed trials on a course to be chosen later.

August 5th.—Team hill-climb for *The Motor Cycle* Challenge Cup. The venue to be a steep hill in some part of Yorkshire.

September 10th.—Team trials to be held over a course similar to that chosen for last year's competition. The award will be the Palatine Trophy, now held by the Harrogate and District M.C.C.



The Motor Cycle
AS SEEN THROUGH FRENCH SPECTACLES

This article is not a translation, but has been specially written for "The Motor Cycle" by a Parisian motor cyclist.

A FEW weeks ago an article appeared in these columns relating to the motor cycle business in France, in which the writer pointed to the apathy of the French towards motor cycles. Some er notes on the question after full consideration interest English readers.

s has been stated, French agents certainly do little indeed, if anything, to push the sale of wares. This applies to agents for French hines as well as to vendors of English imports. he Paris Salon, the man in charge of the Terrot l would not let anybody walk in to look closely at nachine. Of course, to touch the machine was f the question. At one of the English stands, as s walking along, I was very glad, as I am a firm ver in English goods, to see a few people looking models displayed there.

The Attitude of the French Salesman.

ese people, apparently frightened by the reception had already had at other stands, were looking respect, sometimes at the cycle, and then to the in charge, who stood, as firm and as dumb as a behind his machine, and his mind seemed to be far indeed from his business.

oined that little crowd, and was amused to hear marks and guesses at the use of the different . For example, "Fancy having such large springs rry the lamp bracket!" This was too much for nd being bold, having appreciated the kindness e vendors at Olympia, I ventured to explain to the kers how the spring fork worked. To explain se of the levers on handle-bars, I was pointing e air slide which opens or covers the air holes e carburetter, meanwhile moving the lever on le-bar. But then the "attendant," waking from reams, and resenting my intrusion, pushed hastily ever back and said:

ou must not touch, sir."

Vell, well," I said, "it won't hurt, believe me."

es it will," said the man; "you must not ."

ll I tried to explain the rest of the machine to the sted listeners, but had not a chance of showing the brakes or clutch mechanism worked.

hen my audience and I left the stand, I was once convinced of the very unbusinesslike attitude of Frenchman by the observation, "These English machines look all right, but, then, how delicate! Did you notice how the man there was anxious lest something would break on being moved?"

What a difference with the Olympia Show, where all were welcome to touch the various parts, and move the levers, and to ask for information!

The Motor Bicycle's Unpopularity and Why.

There is no questio of doubt that the motor bicycle in Paris is not popular. I also believe that every man of moderate means who would in England buy a motor cycle, contemplates in France the buying of a car, even if he cannot afford to run it more than once every six weeks. A motor cycle would allow him a ride every Sunday at very little cost, but it is not "chic" enough. On his car he is admired, and that is all he wants!

The Frenchman is still of the firm opinion that motor cycles are not reliable, and that they are noisy and dirty machines. This false opinion *must* be removed. Of course, a paper devoted to motor cycling matters would do a lot of good. There is no doubt that *The Motor Cycle* has been a great help to make motor cycles —English ones, I mean—what they are. But I daresay that such a paper would at present have no basis on which to work and to live in France. Still I sincerely believe—and hope—that a day will come, sooner, perhaps, than many could think, when *The Motor Cycle* will have to print a French edition.

The T.T. models would sell among the thousands of boys who go to school (in France much longer than in England) until they are at least eighteen or nineteen years of age, while the F.E. or two-speed models would find a ready sale amongst the soldiers (every man has to serve two years in the ranks), for the owners of motor cycles or cars have a good "start" over the others—they get all the nice open-air work, and are much more appreciated. And, after their two years, I maintain that those who have been used to a motor cycle, and cannot afford a car, would often get an extra h.p. or two and a sidecar attachment.

The French Press and the Paris Salon.

Well, the Paris Salon was a great success, in spite of the opinions expressed by a few English and other papers, but the interest displayed in motor cycles was practically nil. I had some difficulty in finding any report of the M.C. show. Under the heading "Pour la Motocyclette," *l'Echo des Sports* says: "The public has been rightly surprised to note the great fall of the motor cycle in the people's opinion, precisely when in other countries, and especially in England, this speedy and comparatively cheap means of transport is constantly progressing. And yet we have the finest roads in the world."

It continues that it is rather surprising to note that this fall of the motor cycle coincides with the

The Motor Cycle as seen through French Spectacles.—

coming of improvements by which the drawbacks of these machines disappear.

"We are far away ahead of the big motors of five or six years ago. The monster bark of their exhaust resounds only on the echoes of the various tracks. At last it is understood that there is no need to be astride a machine capable of doing sixty miles an hour. Half that speed is sufficient, and comfort has at last replaced mere speed, that real madness which induced demoniac people to fly like thunder through the villages, terrifying hens, ducks, children, policemen, and other poultry of that sort.

"What is needed to make the motor cycle a really practical mount?

"1. Reduction of power.

"2. Reduction of vibration: almost as prejudicial to the machine as to the rider.

"3. To abolish the causes of breakdowns."

Well, all these conditions have been cleverly fulfilled. Motor cycles are now exactly what was asked for by the pioneers, and yet they are on the decline in France!

French Criticisms of the English Exhibits.

With the restriction that "it would be tedious to go into the details of each machine" (English readers would not think so), the *Echo des Sports* courteously begins the inspection of the English exhibits:

"The Triumph is very well built and nice looking. Engine with ball bearings, magneto ignition, and free engine. The Humber closely follows the former, and alike is fitted with a fantastically complicated spring fork. These two machines nicely finished sell on the other side of the Channel like cakes. The Singer, although well made, does not look so pleasant. We do not agree with the position of the component parts. Spring frame to be noted—it is the interesting item of the machine. The N.S.U. has but one fault. It is too well finished; too much trouble has been taken in its making; and it is too complicated. It is splendid workmanship, but one needs at least four hands to handle it. The F.N. still does good work, as also the much appreciated Motosacoche and Moto-Rêve. The former literally crowds the streets in Geneva."

Again I will quote: "The ideal motor cycle should be as follows: Very low frame with a strengthening tube under tank, and sprung fore and aft. Wheels 26in. by 2in. 2 h.p. air-cooled engine single, or, in preference, twin, on ball bearings, m.o.v., magne ignition, V belt drive with jockey pulley, very wi mudguards with flaps and front extension, carrier a stand combined, two brakes on back rim and on b rim, and engine (*i.e.*, carburetter and magneto) *c trolled from tank (!)*. Brakes and valve lifter c trolled from handle-bar."

And the *Echo des Sports* ends by saying: "T amateur may now choose among the various prod tions the one that follows most closely this specifi tion." (Dear me! I *don't* think!)

Now these quotations are from the only article the subject that I could find in the French press. A do they not show how poorly informed the Frenchn are on the motor cycle?

Why do they require the tank control of carbure and magneto! It would simply make the hair of Englishman rise with horror to read such things their favourite paper. And a carrier and stand c bined, as on the machines of five years or more a

That *ideal (?)* specification does not include brake nor even foot-rests.

By the by, the only French machine fitted foot-rests at the Paris Show was the Peugeot. the very first year this old firm—almost as old Humber—makes a machine with foot-rests, also with a foot brake working on the belt rim. I add that the brake is mounted direct on the foot- and not on a special bracket.

Moreover, what is most funny and almost inc prehensible is that certain makes—Swiss or Germ which sell in England with foot-rests, spring fo handle-bar control, etc., are sold here bare and n

Sidecars—an English one and a French one— to be seen for the first time in France.

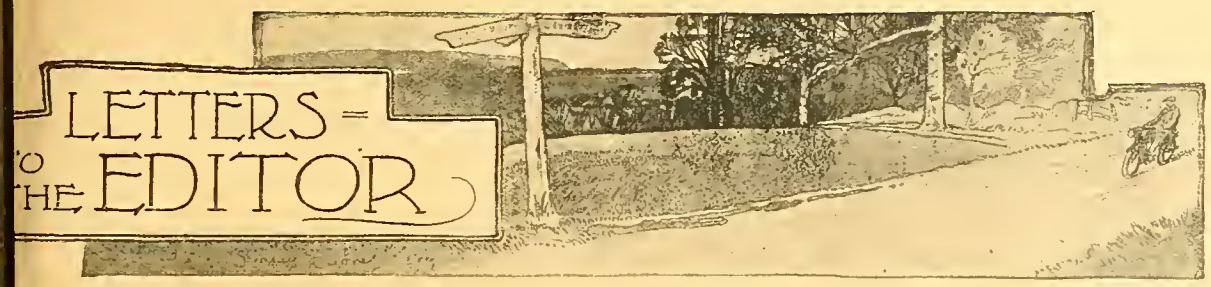
Before ending, I wish to express the hope English makers will take the matter of catering fo French market into consideration, and will bring to us this sport, born in Paris and very worthy o stirring character of the French people.

If an English maker will run the risk of displ each of his models in a *well-situated shop*, and take the steps permitting him to give an assurance *any* spare part can be obtained from the *Paris* per return of post, he will sell his machines very and if besides that he enters a T.T. model in the climbs and makes also attempts on track or records, *and brings the results before the publi* will be well repaid, and in a short space of tim

THE TOURIST TROPHY RACES.

MANX CORONATION PROGRAMME OF AMUSEMENTS.

AS announced last week, it has now been settled that the T.T. motor cycle races be held Friday, June 30th, and Monday, July 3rd, and the course is to be the one known as the "Four Inch" course, which starts from Douglas and runs to Ballacraine, Glen Helen, Kirkmichael, Ramsey, and over the mountains to Douglas, a distance of about thirty-seven miles. These dates have been fixed with the consent of the Douglas Jubilee Committee, who have arranged an elaborate ten days' programme, starting on Wednesday, June 28th, to celebrate the Coronation of King George, and the jubilee of the town or borough of Douglas. Motorists and their friends visiting the Isle of Man at that time will find plenty of amusement. Every day there will big event, such as a world's championship Mar race, bowling, shooting, fishing, and tennis co tions, and two big musical events. In the ev there will be competitions for decorated motors The Jubilee Committee have also under conside the holding of a flying kilometre race for cycles on the cement path of the Douglas Prom The distance has been marked out, and, alt not perfectly straight, is one which allows of speed being attained. The competition will be d into classes, *e.g.*, one open to twins competing T.T. races, another for the singles and for the weights, and another for all comers.



The Editor does not hold himself responsible for the opinions of his correspondents.

tters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address

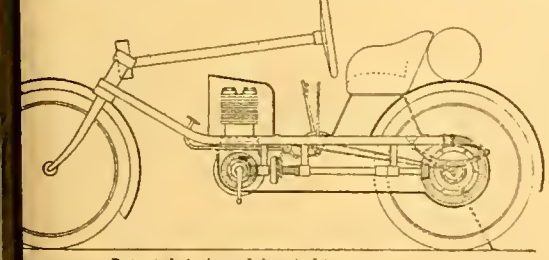
How to Repair a Broken Petrol Pipe.

1.]—On the road the other day I found my petrol broken off short under the carburetter union nipple. ng the lamp—a self-contained one, by the way, so I tubing—I unsoldered the broken portion, and removed the nipple, noticing it had been a slack fit. I then thin tyre repair patch, and, moistening it to make it pushed it into the nipple umbrella fashion, with the pipe, which eventually cut its own hole. r about three tries I got it fairly secure, refitted the ied it up securely from the spiral to the tap so that ight would not undo my joint, and was able to run a les to the next town and get the pipe soldered, but nporary repair seemed quite good even then.

PATCHOL.

n Amateur's Design of Gear-driven Motor Cycle.

2]—I enclose herewith a sketch of a new design for cycles recently patented by me. It has the following ages: Low comfortable position, low centre of gravity uently less danger from side-slipping), wheel steering ial simple arrangement of my own), a clutch (the same on a car), handle starting, and a pair of legs attached



Patented design of low-built mount.

nall side hand lever, which can be brought into play o make the machine stand upright; in fact, it is a ar on two wheels.

J. HIRSCHFELD.

Colonial Requirements.

3.]—As a rider of about seven different motor cycles rent overseas possessions, you will perhaps not be unto hear my views on certain points of motor cycle ction that require modification for colonial conditions. ice that with the advent of the hub two-speed gear, or gine clutch, taking as examples of the former and the the Premier and the Triumph, a dummy belt rim be provided on the tyre wheel. In my opinion, this of braking is at fault. This dummy rim not only dust and dirt, but makes the removal of the tyre ngly difficult; it also interferes with the accessibility valve. I have discarded mine, and have to rely on the m brake. All back wheel speed or hub clutches must and dirt-proof. The back wheel hub is the dirtiest n any machine, and is bathed in dust or mud as the ay be. The two machines mentioned are faultless in pect.

ims of all machines that I have seen, except the F.N., flimsy for colonial roads. Handle-bar spark control solute necessity. It is often impossible to dab at the lever on the rough and twisty corners that have to be negotiated often on a bad gradient. I note that the Triumph tank is hollowed out in front, and it is impossible for any part of the front wheel forks to strike it even in extreme turning movement. Most tanks not so constructed show signs of repair when perhaps a mild fall has resulted in a smashed oil tank.

New Zealand. D. J. DRAKE, M.R.C.S.

[5464.]—I think "Ixion" deserves praise from every colonial for the attention he gives him and the way he looks after his interests.

I note that Mr. Bramble thinks that each colony should have its own special model. Well, I disagree on that point. A perfect motor bicycle should be able to go anywhere.

The chain drive gets a bad name out here, due to the dust, but why? Manufacturers would not think of sending cars out here fitted with an uncased belt drive, on account of the dust. They case the positive drive in, and when the same is done on a motor cycle we shall be a little nearer the perfect machine. Ask Mr. Wilding, of London to Constantinople fame.

It is hard to get a good colonial model because makers find it has to be about two years ahead of the standard pattern—that is, the colonial model must be able to go through all sorts of weather, over bad roads, and be absolutely reliable. Not what they call "reliable" at home.

Regarding ground clearance, I think all machines can be standard on that point, as we all require as much clearance as we can get, especially as we "potterers" sometimes go off the main road where the "sportsman"—or shall I call him the "shamateur"—fears to tread.

By the way, I am glad you are keeping *The Motor Cycle* for motor cyclists only. I also think the detailed accounts of long tours made by your readers, especially the Continental trips, will do much to encourage the "potterers."

Transvaal, S. A. S. HENDERSON.

The Motor Cycle Steamer.

[5465.]—I have carefully read the letters referring to the above, and would like "Old Engineer" to describe his boiler in these columns. This is, of course, the main point. Then, again, cannot some of your able correspondents describe a suitable engine and also a paraffin vapour burner to suit the boiler? These details would give us something to work on and help to make the "steam motor cycle" an accomplished fact. The Wright Bros., the famous American flying men, I believe made a successful steam motor cycle seven or eight years ago. MARK McADAM.

[5466.]—The suggestion put forward by Mr. Thos. F. Hunt [letter No. 5428] with regard to the adoption of a steam turbine as the motive power of a cycle appears to me to be nearer solving the problem of the light runabout than any I have yet seen advocated.

It may perhaps be of interest at least to some of your readers to know that the idea of embodying the turbine in motor car construction has already been mooted, and considered practicable (see patent No. 6087, A.D. 1907, of which I am the holder) and I venture to say that could my proposals be carried into effect, they would be found to be a great advance in many respects on the present internal combustion engine.

The trouble (also mentioned by Mr. Hunt) inherent in the present steam engine as applied to motor traction, of the presence of lubricating oil in the water tank, is entirely removed by the use of the turbine.

I may add that the reason my invention has not been worked is for lack of means. G. R. H. FRITH.

[5467.]—I am sorry to state that I did not receive your paper last week through some mistake of the newsagent, so was not able to reply to those who are interested in steam-driven motor cycles. First of all I would remind "J.R." I am not bewailing the lack of means, nor yet of courtesy, of which he seems to have very little. "J.R." states that the internal combustion engine has an advantage over the steam engine. In what way can he prove that? With steam we find the piston propelled almost the entire length of every stroke, and the combustion engine receives one explosion in every four strokes in comparison to steam. Again, take the advantage in traffic. Few will run less than six m.p.h.; with steam you could go so slowly that it would be almost impossible to balance the machine.

Now "W.G.A." thinks it possible. That is more encouraging, but his design is rather bulky, if he will excuse me saying so. My method is one tank only for water, with a small compartment for unpleasant oil or spirit; no silencer and very small generator; engine 2in. bore, 2¼ stroke; no crank box; flywheel on one side, driving gear the other clamped to frame, inclined or vertical. Exhaust steam is used again to advantage, making engine silent and economical. The whole would weigh less than 100 lbs.

OLD ENGINEER.

Cost of Running a Motor Cycle.

[5468.]—Having seen in your admirable paper the cost of running motor cycles, the following may be interesting.

My machine, a 3½ h.p. Scott, one of the first made by the Scott Engineering Co., I purchased in August, 1909. As soon as I got the machine I fitted a lubricator to the gearshaft and side chain covers. Early in 1910 I fitted the machine with a new radiator of the honeycomb type, made by the Pendleton Radiator Co. The cost of the above I have not added to running cost, as they are not repairs. I have broken one connecting rod and piston, caused by a broken roller, but that was repaired free at the same time the gears were taken down, but they were all right, and I personally have never had them down or adjusted them.

Total miles run for the first twelve months taken from my Veeder cyclometer, 4,202.

	£	s.	d.
Petrol (sixty-nine gallons)	3	17	11
Oil (same used all over) three gallons ...	0	6	0
Plugs, four Reliance to replace others not broken but found inferior	0	16	0
Repair outfit and patches, not all used ...	0	4	9
Packing gauzes, washers, and cleaning cloths	0	4	0
Licences	1	1	0
Repair to back tyre	0	4	6
Carbide for lamp	0	1	0½
	£6	18	8½

= 2.52 miles for 1d. or .39d. per mile.

Petrol averages 60.89 miles per gallon, but on my holidays I did 923 miles on 13 gallons = 71 miles per gallon. The first ride on the machine I used all the tankful in about fifty miles.

At the end of twelve months I took my machine down and examined everything except the two-speed gear, which I did not open out (I am an engineer). No wear to be found on the cylinders or pistons, and rings a good fit in the grooves. A lot of carbon to be found in the exhaust ports; one hole (three in each cylinder) was solid. The bearings were easy but not slack. The two engine driving chains required new ones, not that they were worn out, but the high gear had lengthened more than the low, so if you tried to adjust them one was tight and the other slack. Next time the high gear chain wants renewing I shall fit the low gear chain, just taken off, for the high gear.

The driving chain to back wheel was good; one new link was required for starting chain, so put a new chain on. The back tyre was also bad. Put new screws for the front fork rollers. These have been bad, as dirt got in and made wear and rattle. This fault has now been made right by fixing twin rollers in the newer machines, and all is correct in. So that after twelve months I spent £3 13s. 2d. on the machine. Tyre, £3; chains, etc., 13s. 2d.; and it is then as good as ever.

If the cost of these repairs is added to the running the mileage works out at 1.65 miles for one penny.

I have not put anything down for depreciation or interest on the cost of the machine. Over half my riding is in town, and consists of short journeys of about half a mile. I have ordered a new machine with a request that the petrol tank be made to hold about two gallons. I want to know how it is so many machines are made with a tank to hold about one and a half gallons, so that when you fill up you have to pay for more petrol than you take, as a lot of petrol will not split a can. AK 1

Appreciation of a Lightweight.

[5469.]—There still seems to be a great deal of doubt as to the reliability of lightweights as a whole. In 1906, while in America, I used to ride an Indian single-cylinder, chain driven, which was called, I believe, 1¾ h.p. This machine was fitted with an extension over the back wheel, which carried a second saddle, in place of carrier, and many miles I

The writer of letter No. 5469 and his N.S.U. lightweight.

ridden together with a companion over the roads of the Island, which might be compared with the usual country roads here.

I went in for a 3½ h.p. about eighteen months ago, having a deal of riding to do over very bad roads and many sharp turns, I found it a very awkward machine to manage, and after having a few narrow escapes on the traffic at corners, I decided to go back to a lower power.

I enclose photograph of my present machine—a lightweight with Whittle belt. I weigh 13 stones myself, often carry a younger brother, weighing 7 stones, on the carrier. It climbs hills of average 1 in 8 with ease. The road which has three nasty bends in 200 yards. You will see that the hooter is fastened to the lamp bracket. Up to date I have done 1,600 miles on this machine, with one puncture.

For anybody who has short journeys to run, and is content with 25 to 28 m.p.h. on good roads, lightweights are best, in my opinion. The balance of the machine is such that during the frosty spells this winter when on the slippery roads I have ridden miles with my hands in my pockets.

GEO. CARPENTER.

A Rakish-looking T.T. Mount.

[5470.]—Referring to the illustration of Mr. Cox's ry racy-looking T.T. Brough, on page 237 of last week's ue, it will be interesting to know the diameter of the eels. Apparently they are less than 26in., as the saddle, ich is stated to be 26in. above the ground, is well above tyres. OBSERVER.

Direction Posts.

5471.]—As a surveyor of highways and a motor cyclist vas interested in the two illustrations given on page 226 March 2nd issue. The "new" idea had not occurred me, but in future when directing posts in my district d renewal or replacement, I shall certainly adopt your gestion. Thanking you for same and trusting that other gestions will be brought forward, AF 234.
Liskeard, Cornwall.

Road Obstructions.

5472.]—With reference to the paragraph in your issue the 2nd inst. headed "Road Obstructions," it might erest you to know that, while staying in the neighbourd of Crathorne (between Yarm and Thirsk) last istmas, I also noticed this nuisance. Although I had asion to use this road not infrequently, I never saw a m-roller at work or any attempt being made to improve surface of the road. It is curious to think that on a n road obstructions of this nature should be allowed to ain at all, and I hope that this matter will be further estigated. I am an enthusiastic subscriber to your rnal, every page of which I read with interest.
F. T. ROCHE.

The Roman Road to Edinburgh.

473.]—In *The Motor Cycle* for August 18th, 1910, you lished an article from me entitled "The Roman Road Edinburgh." I have just discovered that, in the sketch which accompanies it, the distance from London to ch Corner is, by a clerical error, given as 243 miles ead of 234. This means that all the subsequent distances too long by these same nine miles. So the total dise from London to Edinburgh is only 373 miles, not as given. Thus there is a very considerable saving by use of this route as well as the far more pleasant ditions.
mentioned in the article that there was a possible ation in the route between the Royal Oak and Harperley going through Bishop Auckland instead of West Auck-, though I said at the time that I had not tried it. A rider has very kindly informed me that my own route uch the better, as it dodges a lot of mining districts.
P. W. BISCHOFF.

Passenger Machines and Differential Gears.

474.]—Regarding "Precentaur's" answer to my cism of his suggested three-wheeler, I am sorry I missed point of the "dead" axle. With the slipping belt eshift, "Precentaur" says that it would not be a very cult matter to procure the "small amount of slip" on small pulley which is already running fast."
ow he says this small pulley is to be 8in. diameter or larger. I do not call that a small pulley; it is, in fact, ly half the diameter of the belt rim, and since the ne speed is to be reduced 2½ to 1 or 4 to 1 before it to this pulley, I do not think it should be described as running.
consider the light four-wheeler an absolutely different lem from the three-wheeler, as in my opinion the chief t in the construction of a tricycle is to get the right ertion of its weight on the front wheel, so that it may the road sufficiently and yet not be "front" heavy or e the driving wheels too light.
revert to the differential, "Precentaur" suggests that belts, two adjustable pulleys (specially designed, I lude), and connections and adjustment arrangements, would be cheaper than a differential and shaft or chain e. I wonder if there is a great deal in it. At any one is a first-class job and the other is a doubtful eshift.
ing an absolute all-weather rider, the belt drive, apart anything else, condemns the whole design in my eyes. uld rather have spur wheel drive.
RALPH WICKSTEED.

A Suggested Motor Cycle Show in the North.

[5475.]—I should very much like to see a motor cycl show to be held in Manchester, as suggested by your corre spondent in your issue of the 9th inst.
The recent show, although magnificent from the car owner's point of view, was a keen disappointment to the motor cyclist, as there was not a solitary model to be seen.
If we are not to have a show, I am sure it is a big mistake, for we Lancashire men cannot afford the time to visit either Olympia or the Stanley Shows, and Manchester alone can boast its hundreds of enthusiasts in the greatest of all sports.
Hoping to hear other readers' views on this subject, and wishing your paper the success it well deserves,
ERIC H. COLLINSON.

The Organisation Scheme for Motor Cyclists.

[5476.]—With your permission I would like to reply to Mr. Cooper's letter [5453] *re* the above. I do remember Mr. Cooper reading me some extracts from what appeared to be a circular; but as I was busy at the time collecting my papers after a committee meeting, I did not pay much attention, but remember passing the remark, "It sounds all right." To my knowledge that is all that passed about the matter.
As I stated in my previous letter, I had received no communication from Messrs. Douglas and Oliver, and was not aware that Mr. Cooper was their representative in the matter, or I might have paid more attention to the extracts read.
Some mistake has evidently been made, but as Messrs. Douglas and Oliver have written to me expressing thei regrets the matter is now closed, as far as I am concerned.
C. C. COOKE.

Sharp Stone Splinters on Wood Pavements.

[5477.]—Is there no way of appealing to the good sense I was going to say charity—of city corporations? I refe particularly to the showering of stone splinters over the wood pavements of Birmingham.
As I am constantly riding backwards and forwards in the city, I have to examine both tyres minutely at the end of each day, and it is extremely rare that I do not extract three or four knife-edged chips embedded in my tyres.
If the authorities would only employ these drastic measures when the streets are frosty and really need something for the sake of horses, I would forgive them; but to find this blue ruin spread in one's path on a mild bright morning with the pavements as dry as bones, is really rather hard on motor cyclists of limited means.
If they must put down something, why not red sand, as they used to in Birmingham? Perhaps this is more expensive, but surely the motor cyclist is taxed heavily enough to give him a voice in the matter.
From other letters on this subject which have appeared in your columns, Birmingham is not the only city thus afflicted. E 886.

Infinitely Variable Gears in Hill-climbs.

[5478.]—I must thank you for inserting so promptly my letter about the unfair treatment of our machines in hill-climbing competitions, and I have now, unfortunately, to bring forward another case of thie sort.
In your issue of the 9th inst. you give the classes for the Oxford M.C.C. open hill-climb. These classes are certainly correct according to the entry forms sent out by the club, but a supplementary regulation No. 17, which you do not give, alters the aspect of the event.
This regulation is short and sweet, and reads as follows: "Variable gears may be used in all classes except 5 and 6." Now as classes 5 and 6 are for standard touring single and twin-cylinder machines respectively (note "standard touring"), we claim that these classes should admit our standard touring machines, and the public would certainly expect, from a first glance at the rules, and from the programme which is published, to see our machines figuring in these classes, and it is only by a supplementary regulation, pushed in at the bottom of the list, that our machines are kept out.
Open hill-climbs have to receive the sanction of the A.C.U., and it is not clear, in giving permits for these events, that the A.C.U. see the whole of the programme, including the supplementary regulations.
The variable gear class was instituted to encourage the development of the motor cycle, and at that time it was

necessary to make a separate class for variable gears, in order to foster the perfection of a device to fulfil a crying need.

We submit that the day for a separate variable gear class is past, and until the variably geared machines of our make showed their efficiency on formula, there was never any question of keeping any variable gear out of the standard touring classes.

The Bristol Club has decided that a two or three-speed gear is not a variable gear, and if this is so, the only machines admitted to the variable gear class would be machines with not more than three speeds.

This is not the ordinary acceptance of the term "variable gear," and we think that it is high time that some definition of this term were laid down, particularly for events which are styled open and have to receive a permit from the A.C.U.

We claim that, if a class is framed for "standard touring machines," no club has any justification for keeping us from competing in such a class, especially in an open event, unless it is willing to state its reason, and we maintain that the reason is that it is afraid if it let our machines compete, entries will be discouraged.

We shall be only too glad if the club can clear itself from this charge. We know this to be the reason for a similar action taken by at least two other clubs.

ZENITH MOTORS, LTD.
W. G. BOWER.

Twin-cylinder Sociables.

[5479.]—Having read several letters in your correspondence columns with reference to the capabilities of the A.C. engine, I should like, as the former owner of a tandem and the present owner of a sociable, to give some of my experiences with these machines.

As long as the engine is kept in reasonably good tune there is plenty of power for all ordinary purposes, and, if the roads are in anything like decent condition, it is quite easy to keep up a 20 m.p.h. average. The engine is wonderfully good on hills, and will go on pulling strongly on top gear when the speed has fallen as low as 12 m.p.h., and this without any thumping or knocking.

On the low gear it feels as if it would climb almost any hill, though, as a matter of fact, I have not taken it up anything steeper than 1 in 6. The fitting of an 8 h.p. twin would, of course, enable one to keep up a higher average speed, but it would in some measure detract from two of the chief merits of the A.C., which are—(1) extreme simplicity, and (2) wonderfully economical running.

With regard to the two types of machine, I consider the sociable infinitely preferable to the tandem, as I find it more comfortable and easier to steer. The only things which seem to upset the steering when running fast over frozen ruts or a quick succession of small potholes in the track of the rear wheel.

I feel sure that if "Ilikum" invested in an A.C. he would be absolutely satisfied with it. D. A. HIND.

The April Quarterly Trial.

[5480.]—I notice in *The Motor Cycle* of March 2nd, the route selected for the next quarterlies is in Yorkshire, and my object in writing this is to point out the fact that unless the route is well marked, especially at the Scawton Road and in Pickering, there is likely to be some misunderstanding amongst the first batch (if they come in batches) of competitors as to which road to follow; also if any prospective entrants read this (I have no doubt a good number will) they must come prepared for some rough colonial-like roads, the like of which abound in the North Riding of Yorkshire.

Particular caution should be exercised in descending Scawton Bank, as the stone-gulley mentioned in the published route is highly dangerous.

Rievaulx Bank, too, will, I think, give the machines a chance of showing what they are capable of as regards hill-climbing, and incidentally show the skill of the riders, as the hill will almost certainly be in a "skid-crême" condition.

I am quite aware of the fact that the entrants will know what to expect, but nevertheless the writer thinks that

KNOWLEDGE IS POWER.

Tyres and Sideslip.

[5481.]—Replying to your correspondent Mr. R. Lindsay [5445], the Kempshall tyre which proved so effect against sideslip in the ride I wrote you about was of kind described by the makers as their ribbed non-s (extra strong) pattern.

On two occasions subsequently I found the same t a perfect safeguard against skidding, whilst riding on tra lines and roads thickly covered with grease. I h no interest of a financial character in the Kempshall fi

CHAS. S. LAKE

Oily Sparking Plugs.

[5482.]—I was interested in reading the letter signed W. O. Oldman in your issue of March 2nd. Would Oldman be kind enough to give us his experience of V.S. engine, as I have had considerable trouble with and sooty sparking plugs? I oil every eight miles, suggested by the makers, and have to be constantly clean plugs to get a good spark. I have tried all the best oil

HEAVY TWIN

Paving in Halifax and District.

[5483.]—May I, through the medium of your valu paper, draw attention to the wretched condition of the pav of the streets in Halifax and surrounding districts?

I have just returned from a ride part of which was thro Hipperholme, Halifax, Sowerby Bridge, and Triangle. stretch was one series of nerve-racking bumps and tw over upstanding tramlines. The streets are very narrow, it is no exaggeration to state that one is frequently fo by traffic into holes 8in. deep.

These stormy passages have led me to the conclusion "Ixion's" remarks anent the construction of machines the rough travelling of the colonies would apply equally to that of machines for the district under discussion.

In conclusion, I would suggest that as a protest aga this state of affairs motor cyclists find somewhere els pay their local taxation licences—some place where get, at least, a little return for their money.

Wishing your paper every success,

G. M. COLBEC

Motor Cycle Taxation.

[5484.]—I read the letters in your issue of the 23rd ul iniquitous taxation of motor cycles with great interest.

Last summer I purchased for a few pounds a second- machine, which I myself overhauled, and got some conside healthy pleasure from its use in the evenings and Satu afternoons, but I was forced to give it up this year on acc of the tax.

Why should people who go abroad to spend their m on health or pleasure not be taxed, say, £50 for the week's absence, and £25 per week till their return? would keep a great amount of money, now circulated ab in our native land for the good of which some membe Parliament are so desperately anxious. Ex M.S.

SUMMARY OF CORRESPONDENCE.

The Aston Motor Accessories Co., Ltd., write: "'Ix in comparing the advantages of one big and many small expresses the hope that 'makers would return to the ros or other modification, incorporating the multiple or From this remark it might be judged that there is no carburetter on the market. In the 1910 non-automatic A the petrol enters through a single jet at the bottom o mixing chamber. After that the petrol enters the p mixing chamber through a special sprayer fitted across through air inlet. In other words, instead of the p entering the mixing chamber through one hole it do through five, giving as good a mixture as it is practica obtain. As these spraying holes in no way regulate quantity of petrol, there is no need for same to be sm diameter; as a matter of fact, each separate one is con ably larger than the hole in the single nozzle at the b of the chamber—that is, all foreign matter in the petro will pass through the single nozzle is also sure to through the multiple sprayer."

Will B. Taylor who wrote from Spencer Road, As under-Lyne, kindly note that a letter addressed to him been returned marked "no such road in Ashton-u Lyne"?

VALVE CHEST DESIGN.

IN the spring of 1910 when the Rudge motor bicycle was in course of preparation, and only existed in the designers and draughtsmen's minds and on their drawing boards, there were many discussions held between the selling and producing staffs as to the advisability of making an engine with overhead inlet valve. Overhead valves were disfavoured by one staff member because he had heard the heads were prone to break off, and if they did break the head would get into the cylinder and cause serious damage.

Whilst this may be true regarding certain types of overhead valves which are arranged directly over the piston head and unprovided with any pocket or means for preventing a broken head from falling into the cylinder, it is quite safe to employ overhead valves if they are robbed of this objectionable fault by so designing the combustion head that in the event of breakage it is practically impossible for the valve to enter the cylinder. Now at the time the Rudge engine was first drawn out the shape of the passage from the valve chamber to the cylinder was practically a rectangle, *i.e.*, 1.8in. × .8in., giving an area of 1.44 square inches, while the diameter of the valve was 1.75in.

It was wisely argued by the works management that even if the valve heads could not enter the cylinder many riders would say they could, because Rudge practice differed from standard practice. It was, therefore, decided so to make the valve chamber that even if a valve head broke off it could not possibly get through.

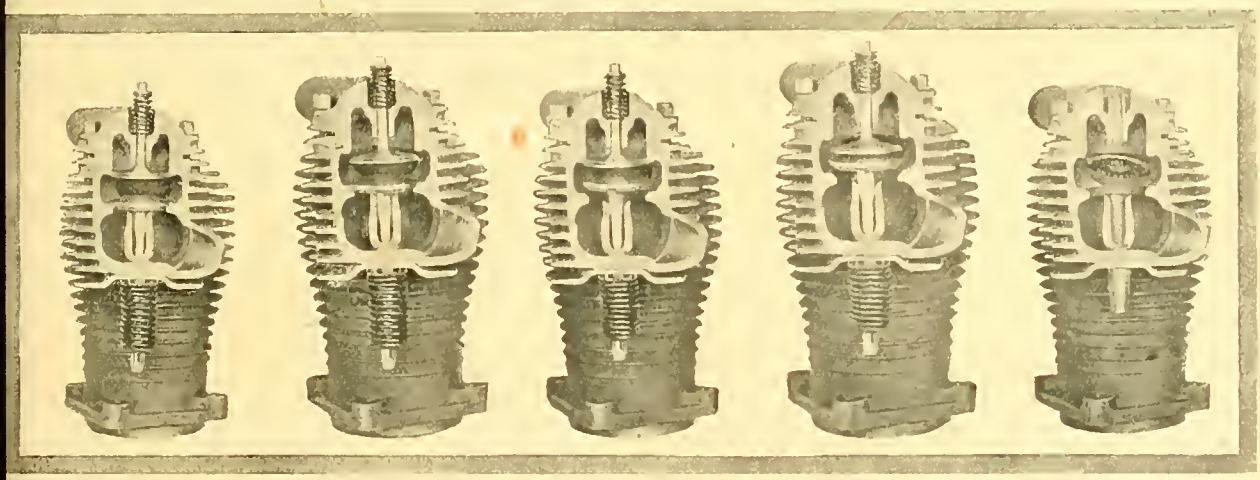
It was at once seen that, by altering the shape and still keeping the large cross sectional area, the maximum dimension of the passage could be reduced to 1.7in., the valve head being 1.75in. With this alteration the conditions are that even if the head broke off it could not get into the cylinder, because the diameter of the valve head is greater than the biggest dimension of the passage.

The first illustration shows a section of the valve chamber with both valves closed, showing also in section the patent protecting sleeve which keeps the exhaust valve cool; note also the large diameter of the stem near the top.

The second shows the same thing with the inlet valve open, and the third with the exhaust valve open.

In the fourth both valves are open, viz., the condition which obtains when running with the exhaust valve lifted.

The fifth is that of the throat or passage between the valve chamber and the cylinder with one of the company's trademarks unable to drop through. This trade mark is exactly the same diameter as the inlet valve.



Sectional views of the Rudge cylinder showing the shape of the passage between the valve chamber and cylinder and valves in various positions.

SATURDAY'S B.M.C.R.C. MEETING.

Entries for the first 1911 meeting of the British Motor Cycle Racing Club next Saturday are as under-noted :

2.0 P.M.—ALL-COMERS' PENALTY HANDICAP.

No.	Name, cylinders, and make of machine.	Size.	c.c.
1.	J. Fowles (1 Whitgift)	85.5 × 60	348
2.	A. Webster (1 Hobart)	70 × 78	300
3.	C. S. Burney (1 Rudge-Whitworth)...	85 × 88	499
4.	V. J. Surridge (1 Rudge-Whitworth)	85 × 88	499
5.	F. McNab (1 Trump-Jap)	85.5 × 85	488
6.	Baker White (1 Trump-Jap)	85.5 × 85	488
7.	J. Slaughter (1 L.M.C.)	85 × 88	499
8.	E. B. Ware (1 Norton)	79 × 100	490
9.	A. Maitland (1 Trump-Jap)	85.5 × 85	488
10	J. R. Haswell (1 Triumph)	85 × 88	499
11.	A. G. Miller (1 Premier)	85 × 88	499
12.	O. C. Godfrey (2 Indian)	82.5 × 93	994
13	W. L. T. Rhys (1 Triumph)	85 × 88	499
14.	R. V. Stewart (1 Trump-Jap) ...	85 × 85	482
15.	J. S. Holroyd (1 Motosacoche) ...	64 × 75	241
16.	W. F. Guiver (1 Kerry-Abingdon)...	85 × 88	499
17.	H. Martin (2 Martin Zedel)	85 × 85	482
18.	S. T. Tessier (2 Bat-Jap)	76 × 64	580
19.	F. H. Arnott (2 V.S. Peugeot) ...	75 × 75	662

2.30 P.M.—JUNIOR T.T.

2.	A. Webster (1 Hobart)	70 × 78	300
5.	H. S. Powell (2 N.S.U.)	52 × 74	314
6.	C. Patteson (2 Moto-Rêve)	52 × 80	170
7.	Hodgetts (2 Moto-Rêve)	52 × 85	180
15.	J. S Holroyd (1 Motosacoche) ...	64 × 75	241
28.	J. Woodhouse (1 New Hudson)	70 × 76	292
17.	H. Martin (1 Martin-Jap)	76 × 65	295
29.	F. W. Barnes (1 Zenith-Gradua-Jap)...	76 × 65.6	299

3.45 P.M.—SENIOR T.T. RACE.

3.	C. S. Burney (1 Rudge-Whitworth) ...	85 × 88	499
4.	V. J. Surridge (1 Rudge-Whitworth)	85 × 88	499
5.	F. A. McNab (1 Trump-Jap) ...	85.5 × 85	488
6.	A. Baker White (1 Trump-Jap) ...	85.5 × 85	488
7.	J. Slaughter (1 L.M.C.)	85 × 88	499
8.	E. B. Ware (1 Norton)	79 × 100	490
9.	A. C. Maitland (1 Trump-Jap) ...	85.5 × 85	488
10.	J. R. Haswell (1 Triumph)	85 × 88	499
11.	A. G. Miller (1 Premier)	85 × 88	499
12.	O. C. Godfrey (1 Indian)	82.5 × 93	497
13.	W. L. T. Rhys (1 Triumph)	85 × 88	499
14.	R. N. Stewart (1 Trump-Jap) ...	85 × 85	482
16.	W. F. Guiver (1 Kerry Abingdon) ...	85 × 88	499
18.	S. T. Tessier (2 Bat-Jap)	76 × 64	580
19.	F. H. Arnott (1 Triumph)	85 × 88	499
25.	H. S. Powell (1 N.S.U.)	85 × 88	499
28.	J. Woodhouse (1 Precision)	85 × 88	499
29.	F. W. Barnes (1 Zenith-Gradua-Jap)	85.5 × 85	488
39.	Howard Smith (1 Triumph)	85 × 88	499
40.	Alan Hill (1 Rudge-Whitworth) ...	85 × 88	499
41.	Gordon Bell (1 Norton)	79 × 100	490
42.	Harrison Watson (1 Triumph) ...	85 × 88	499
43.	P. Weatherilt (1 Zenith-Gradua-Jap)	85.5 × 85	488
44.	G. E. Stanley (1 Singer)	85 × 88	499

CURRENT CHAT

Special Features

THE TRADE AND THE TRIALS.

THE MOTOR CYCLE THROUGH FRENCH SPECTACLES.

THE MILITARY MOTOR CYCLE.

Time to light Lamps
(Greenwich)

Mar. 15th	...	7.5 p.m.
,, 18th	...	7.8 p.m.
,, 20th	...	7.11 p.m.
,, 22nd	...	7.15 p.m.

Next Thursday's Special Spring Number.

Every phase of the pastime will receive attention in our eighth annual spring number to be published next Thursday. The actual or prospective motor cyclist, male or female, novice or expert, whether a passenger or motor bicycle enthusiast, will find much to interest him or her.

Steep Hill at Grasmere.

Red Bank Hill must be one of the steepest hills in the Lake District. The gradient at the steepest part is said to be 1 in 3½. The length of the hill is about one-third of a mile, with an average gradient of about 1 in 7.

An Interesting Lecture.

Mr. T. W. Loughborough, best known to our readers as secretary of the British Motor Cycle Racing Club, will read a paper entitled "The Modern Motor Bicycle," before members of the Woolwich Engineering Society, at the Woolwich Polytechnic on Wednesday, April 5th. Tickets may be obtained from the hon. sec. of the society, who should be addressed care of the Woolwich Polytechnic.

Our Growing Trade in Motor Cycles.

The Board of Trade returns for February show a decided increase both in imports and exports. One hundred motor cycles were imported, and 452 exported last month alone. Their values, together with the January returns, compared with previous years were:

IMPORTS DURING JANUARY AND FEBRUARY.

	1909.	1910.	1911.
Number ...	118	186	216
Value ...	£3,222	£5,837	£6,501
Parts thereof	£4,172	£8,075	£9,712
Total ...	£7,394	£13,912	£16,213

BRITISH EXPORTS

During the two months ended 28th February, the British exports of motor cycles are represented as under:

	1909.	1910.	1911.
Number ...	194	418	957
Value ...	£6,519	£15,258	£35,944
Parts thereof	£4,448	£5,187	£8,704
Total ...	£10,967	£20,445	£44,648

Re-exports.

Foreign motor cycles and parts re-exported from this country during the above mentioned period were valued at:

1909.	1910.	1911.
£2,609 ...	£674 ...	£1,516

Easter Racing Events at Brooklands.

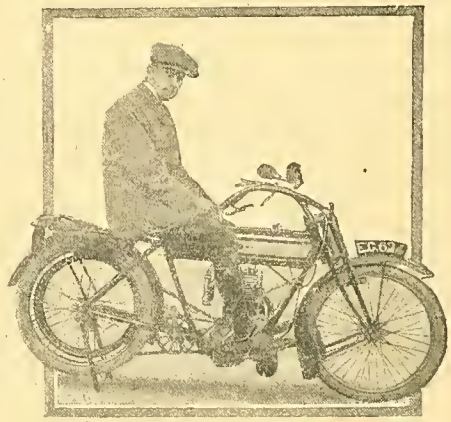
The B.A.R.C. programme for the Easter Monday meeting at Brooklands includes two motor cycle events—(a) the second 65 m.p.h. handicap and (b) the fourth 70 m.p.h. handicap. The conditions are precisely the same as those governing the first 65 m.p.h. and the third 70 m.p.h. events announced for the first 1911 Brooklands meeting on Saturday, March 25th. The conditions were given in our issue of February 23rd, page 195.

Best English and American Times.

If De Rosier had only left his new hour record until he came over to England, he would have had the finest opportunity of allaying any suspicion attached to American records set up on Yankee motor cycles. On the occasion of the record in question, De Rosier rode a 7 h.p. Indian, and it is a curious fact that the fastest speed yet accomplished in a Brooklands motor cycle race was on a similar mount, yet the speed was ten miles per hour slower.

The London to Edinburgh Route.

For some time the Royal Automobile Club has been engaged in signposting the whole of the Great North Road with the object of directing motorists to follow the best route between the two capitals, avoiding large towns as much as possible. At the entrance to all the principal towns and villages plaques are erected showing the distance between London and Edinburgh, and the distance to the next village, while an arrow is displayed showing the direction. At all doubtful turnings an arrow is erected with the words to London or to Edinburgh as the case may be. So far signs have been erected all the way from the metropolis as far as Retford, and as soon as the matter has been passed by the West Riding of Yorkshire County Council the signposting will be proceeded with as far as Boroughbridge. The whole road should be completed by the end of the year.



A. Harrison, who last week climbed Honister Pass from the Seatoller side on his 3½ h.p. Rudge-Whitworth. We understand that a gear of 5¾ to 1 was used.

The State of the Industry.

As an instance of the number of motor cycles which are being sold we were recently told by a firm of manufacturers who exhibited at Olympia, but were not ready to supply until just lately, that they filed the enquiries they received at their show stand until they were in a position to give a fairly reasonable time for delivery. Three weeks ago they communicated with all their enquirers and found that fifty per cent. had actually purchased machines in the interval.

Customs Tariffs.

In nearly all countries except Great Britain a tax is imposed upon an imported motor bicycle. This tax is usually *ad valorem*. We are often asked if the full duty has to be paid in the case of a second-hand machine. In the case of a fixed tariff, such as is enforced in France, namely, £4 9s. 5d. per cwt., no difference is made, but in the case of a 20% *ad valorem* tariff, as is imposed in Belgium, on second-hand machines a lower valuation than the original cost is naturally accepted.

Easter Motor Cycle Tour.

A delightful tour for the Easter holidays, in the North of Ireland is being organised by Mr. W. I. Thompson, "Norton," 23, Alexandra Road, Southport. The start will be made from Liverpool for Belfast at 9.30 p.m. on Saturday, April 15th, and the itinerary includes the principal places of beauty and interest on the north-east and northern coasts of Ireland, the Giant's Causeway, the Donegal Highlands, etc. The route chosen provides some stiff hill-climbing on good roads. First-class steamer and hotel accommodation is guaranteed. As the number has to be limited, early application to Mr. Thompson is necessary. The inclusive fare for the whole trip will be £4 4s., and Liverpool will be reached on the return journey at 6 a.m. Wednesday, April 19th.

Motor Cyclist's Appointment.

Captain Sir R. K. Arbuthnot, Bart., Commodore of the First Destroyer Flotilla, has been appointed aide-de-camp to His Majesty the King.

The First Ladies' Competition.

Mrs. Wade, of Hilseson House, Albany Road, Cardiff—a Scott rider—is a likely competitor in the first ladies' competition at Easter for *The Motor Cycle* Cup, and would like to hear from other ladies in her district who are desirous of competing.

Canadian Police on Motor Cycles.

Toronto is to have motor cyclist police patrols to suppress furious driving of cars, but, what is still more interesting, British motor cycles have been ordered for the use of the Police Department. The order is in the hands of the Tandent Cycle Co., the Toronto agents for the Triumph.

Roller Skater v. Motor Cyclist.

On Thursday last a motor cycle race was held at the Lowestoft Roller Skating Rink, the distance being one mile (sixteen laps to the mile). It was won by H. Trail in 3m. 4⅘s. riding a 3½ h.p. Rex. The following machines also competed: 8 h.p. Minerva, 3½ h.p. Premier, 2¾ h.p. Anglian, and 3½ h.p. Crooke.

Fatal Accident in Coventry.

We regret to have to record a most serious accident which occurred on the Holyhead Road, Coventry, on Saturday afternoon last, by which a motor cyclist lost his life and another suffered a broken leg. The deceased was Charles Gent, of Small Heath, who was entering Coventry by the main Birmingham Road, when another motor cyclist—William Milliner, of Coventry—entered the main road from a side street with the intention of riding to Birmingham. A collision was the result, with the serious consequences we have recorded.

The Ruling for Ladies' Competitions.

As might be expected, one or two points have occurred already in connection with the initial competition for lady motor cyclists. The entry form sets forth "ladies' machines" only can be entered, which presumably may be taken to read as machines with dropped frame necessary for a skirt.

This ruling, if adhered to, will debar at least one competitor, Mrs. Hardee, of Greenwich, who informs us that she has received particulars of the trial and entry form from the organising sec., Mrs. Cooke, the latter mentioning that the standard two-stroke Scott machine is eligible, Mrs. Cooke at the time of writing evidently being under the impression that Mrs. Hardee owns and drives this make of machine.

With the present-day machine, with low frame, a divided skirt, as worn by Mrs. H., is hardly recognisable from an ordinary one; indeed, her machine is generally taken to be one with part of the tank and frame cut away.

"I should be greatly disappointed," the lady adds, "if unable to compete, as I am so thoroughly accustomed to my P. and M. With its half compression device for easy starting, simple and easily operated two speed gear, and footboards and comfortable low build, it is essentially a machine for ladies." Perhaps a solution of the difficulty would be to allow any type of machine.

FUTURE EVENTS.

Mar. 18	B.M.C.R.C first 1911 meeting at Brooklands.
„ 23	A.C.U. Annual General Meeting.
„ 25	Meeting at Brooklands.
Apr. 1	M.C.C. Opening Run to Brighton.
„ 1	Oxford M.C.C. Open Hill Climb.
„ 14-17	M.C.C. London-Land's End Trial and Easter Tour.
„ 14-17	Herts County A.C Inter-club Tour, to Harrogate and back, first Ladies' Competition, and Open Hill Climb.
„ 17	Westmorland M.C.C. Open Hill Climb on Shap Fell
„ 22	A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
„ 29	Bristol B. & M.C. Open Hill Climb.
May 6	Herts. County A.C. Open Hill Climb.
„ 27	Herts. County A.C. Open Speed Trials.

The Easter London-Land's End Run.

We are asked to announce the fact that any motor cyclist wishing to participate in the M.C.C. London-Land's End and back competition for the Jarrott cup must apply for membership immediately.

A Suggested Test Hill.

For the inter-club open hill-climb in Yorkshire on Easter Saturday, a comparatively unknown hill has been suggested to the Herts County A.C. It is near Ilkley, and known as Weary Hill. It rises 698 feet in one and a quarter miles, and there is an acute turn both to the right and left on a gradient of 1 in 6.3. The steepest gradient is 1 in 6.1.

A Lengthy Title.

The body which represents the interests of the motor cycle trade rejoices in the title of "The Motor Cycle Section of the Cycle and Motor Cycle Manufacturers' and Traders' Union, Ltd.," or, abbreviated, the M.C. Section of the C. and M.C.M. and T.U., Ltd., which is not only difficult to remember, but needs a dictionary to refer to to find its correct meaning. The full title is strongly reminiscent of the following word we noticed written in a German railway carriage: Der Königlich herbayerischerstaatseisenbahngesellschaft. Perhaps our readers would the better recognise the body under consideration, and be in a better position to realise the good work it does, were we to refer to it in future, as we propose to do, as "The Motor Cycle Manufacturers' Union."

A FINE WEEK-END. Manchester motor cyclists on the Chester road.

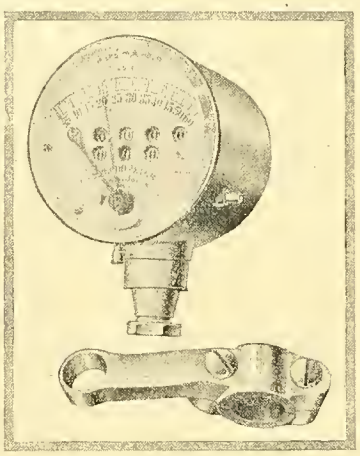
THE COMING TOURIST TROPHY RACE.

PRACTISING IN THE ISLE OF MAN.

IT is freely stated that Messrs. Rudge-Whitworth, Ltd., are out to win the Senior T.T. Race in the Isle of Man on the 3rd July next, and it is evident that they are doing all in their power to achieve this object. On Thursday of last week considerable astonishment was caused in Douglas when it became known that Messrs. Hill and Davis were on the island with two machines. Their headquarters were the Royal Hotel, and soon they were sought out and seen by all the local motor cyclists, including Brown, who rode the only Humber to a finish in the last T.T. race, and Smith, who broke his collar-bone on a Triumph. Davis was riding what he called a Brooklands machine with dropped handle-bars. He told the writer that the machine was new, and that it had already put up a speed of 58. He has been around the course and does not like it. He complains of the hills, turns, and surface. Allan Hill's machine was fitted with a N.S.U. two-speed gear. Whilst on the island they have taken rooms for their party at the Glen Helen Hotel, but the Douglas people, who have arranged a great programme, want all the motor cyclists to stay in Douglas, as their assistance will be required very considerably for the evening entertainments. Moreover, the start of the course is only about a mile from Douglas promenade.

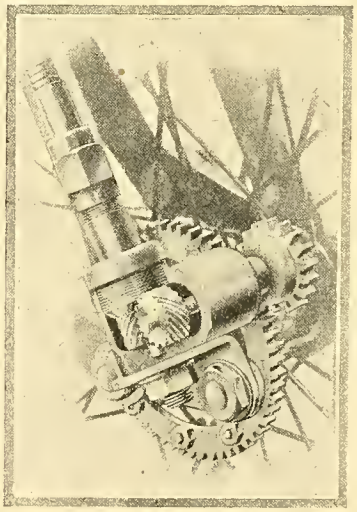
SOME INTERESTING NOVELTIES.

THE enterprising firm of Messrs. Markt and Co., 6, City Road, E.C., has just placed on the market the latest model of the No. 32 Jones speedometer. The success of the Jones speedometer has been quite extraordinary. It was the first practical speed measuring instrument to be fitted to a motor cycle; it has held its own ever since its introduction, and of its excellence we can speak from personal experience, having had one in use for over three years. The latest model we are about to describe is provided with a maximum hand with instantaneous reset controlled by a knob, a mileage recorder, and a trip recorder, which can be reset by another knob, and a new type of bracket only just introduced, which allows the instrument to be carried either in front of or behind the handlebars, and also permits its dial to be set at any angle. These speedometers can be purchased to record up to 80 miles an hour if desired without additional cost.



The Jones 1911 pattern speedometer with new type bracket.

Yet other improvements are to be found in the driving mechanism. Firstly, the shaft may be had either in a nickel-plated casing as before or in one protected by leather, a great improvement, as it involves equally good protection and less cleaning. Secondly, the new method of transmission is interesting. It will be seen, or referring to the illustration, that the primary drive from the front wheel to the cross shaft is unaltered, but in this latest model a special bracket is provided which allows the flexible shaft to run straight down from the handle-bar, and permits the driven wheel to be placed above, below, in front, or behind the driving wheel, while the final drive is by a spiral gearing.

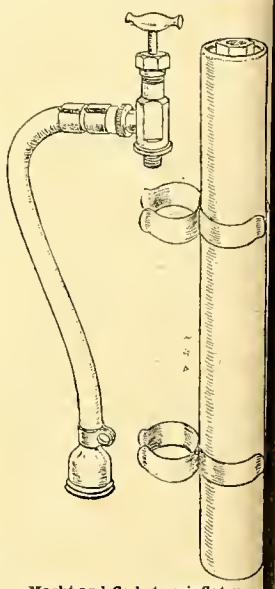


New system of spur and spiral gear drive on the Jones speedometers.

This gear box is supplied to the two more expensive models without extra charge, while with the cheaper it is an extra. The Baby Giant pulley remover has been described before in our pages, but as it is a really useful article it deserves a reference, while we may mention that a special pattern has been evolved to deal with Douglas pulleys.

A Distinct Novelty.

A real novelty is the Prest-O-Tire tube—a tube filled with carbonic acid gas under pressure for inflating tyres. It is shorter than the average tyre pump, but rather thicker, and it weighs but 18 ozs., and contains, we should imagine, sufficient gas to inflate about eight motor cycle tubes. The price is not excessive, and refills cost but 6d., while, of course, the labour and time saved are enormous. To inflate the tyre it is only necessary to unscrew the needle valve and connect the union nut of the valve mechanism to the tyre valve, then turn the needle valve slowly and the tyre inflates. The mechanism only needs very slight modification to suit the needs of motor cyclists, and could be conveniently attached to any suitable frame tube by suitably sized pump clips.



Markt and Co.'s tyre inflator.

OXFORD M.C.C. HILL-CLIMB.

On Irondown Hill, Deddington, the above club held its opening competition on Saturday last. The results are given hereunder:

CLASS I.—Single-cylinders of unlimited size. Results on A.C.U. formula.

1.	H. G. Hill (Bradbury) ...	87 × 87 mm.	517 c.c.
2.	J. W Tolloday (T.T. Triumph)	85 × 88 mm.	499 c.c.
3.	C. Buckwell (Triumph) ...	85 × 88 mm.	499 c.c.

CLASS II.—Twins of unlimited size.

1.	N. White (2¾ Douglas) ...	60 × 60 mm.	340 c.c.
2.	G. M. Oliver (7 Indian) ...	83 × 93 mm.	998 c.c.
3.	T. B. Darley (8 Bat-Jap) ...	85 × 85 mm.	964 c.c.

J. W. Tolloday accomplished the fastest ascent in 33⅗s. on his T.T. Triumph, G. M. Oliver (7 h.p. Indian) being next four-fifths of a second slower, and H. G. Hill (3½ h.p. Bradbury) third fastest with 34⅘s.

W. and A. Bates, Ltd., St. Mary's Mills, Leicester, are giving away some road maps which should be of service to motor cyclists. Riders who desire to become possessed of a map of the district in which they reside should send their full name and address to the firm as above together with the district required, when they will receive a map by post and without any cost to themselves.

STARTING DIFFICULTIES.

We are receiving a number of queries from readers complaining of difficulty in starting their machines from cold, and asking for the remedy. In 75% of such cases it can be traced to the adjustment of the carburetter. In cold weather a smaller quantity of air is of course needed, and those motor cyclists who have not taken the trouble to cut down the air supply for winter riding are advised to do so. A smaller sized air adapter around the jet will work wonders by concentrating the inrush of air on the down stroke around the jet. Various sized air funnels cost but a few coppers.

LONDON-EDINBURGH-LONDON.

A preliminary announcement respecting the above important Whitsuntide event has been sent to us by the Motor Cycling Club trials hon. sec. for this run, Mr. Harry G. Bell, who has engineered the event for four consecutive years, and will again handle it for 1911. As last year, competitors in the double journey will compete for the Motor Cycling Club challenge cup for motor bicycles *only* and gold medals for motor cycles.

With regard to sidecars in this competition, it has been decided that anyone entering and starting with motor cycle and sidecar, with or without a passenger, must drive the combination throughout the run.

The entrance fees have been slightly increased. This is owing to the fact that the London-Exeter winter run made inroads into the club finances owing to the large number of prizes gained.

The entrance fee for the Edinburgh run is 21s., for the out and home journeys gold medal 31s. 6d., and gold medal and Motor Cycling Club challenge cup for motor bicycles 31s. 6d. In the case of members elected prior to December, 1907, half fees (10s. 6d.) will be charged for the outward journey, and in the case of members elected prior to December, 1909, who have never gained a London-Edinburgh gold medal, a similar fee will be charged for the outward journey.

The route remains the same as last year, also schedule of maximum times.

Whitsuntide falling later this year means that there will be less riding in the dark, and doubtless warmer weather, which should tempt fair weather riders.

The competition extends from June 2nd to the 5th. The trials hon. sec.'s address is 3, Granville Road Finchley, London, N.

CLUB NEWS.

Cambridge University M.C.C.

This club held a hill climb at Moulton, near Newmarket, on Saturday, March 4th. Undernoted are the results on time. The formula positions will be announced later.

LIGHTWEIGHT CLASS.

	Secs.
A. Drysdale (2¾ h.p. J.A.P.)	X
G. Gillan (2¾ h.p. Douglas)	X + 18
A. G. S. Miller (2¾ h.p. Douglas)	X + 21⅗
A. W. L. Barlow (2¾ h.p. Douglas) ...	X + 34⅗

3½ H.P. CLASS.

N. Gray (T.T. Triumph)	X
W. A. Fox-Strangways (T.T. Bradbury) ...	X + 4⅘
G. A. Sheppard (T.T. Roadster Triumph)	X + 6⅗
P. H. Dodgson (3½ h.p. Triumph) ...	X + 7
E. S. Brittain (3½ h.p. Bradbury)	X + 9⅘
J. P. Wills (3½ h.p. Zenith-Gradua) ...	X + 10⅕
M. G. Harris (3½ h.p. Triumph)	X + 12⅘

UP TO 650 C.C. CLASS.

N. Gray (T.T. Triumph)	X
W. A. Fox-Strangways (T.T. Bradbury)	X + 3
C. R. Farnsworth (5 h.p. Indian)	X + 3⅕
P. H. Dodgson (3½ h.p. Triumph)	X + 5⅕
E. S. Brittain (3½ h.p. Bradbury)	X + 8⅕
J. W. Cox (T.T. Brough)	X + 9⅘
M. G. Harris (3½ h.p. Triumph)	X + 10

OPEN CLASS.

J. S. Parker (8 h.p. Bat)	X
N. Gray (T.T. Triumph)	X + 0⅕
W. A. Fox-Strangways (T.T. Bradbury)	X + 2
C. R. Farnsworth (5 h.p. Indian)	X + 2
M. F. Walsh (7 h.p. Indian)	X + 2⅕
P. H. Dodgson (3½ h.p. Triumph)	X + 5⅕
J. P. Wills (3½ h.p. Zenith-Gradua) ...	X + 7⅕

Fastest time of the day was made by N. Gray (T.T. Triumph) when running in the 3½ h.p. class. Time 55 secs.

Glasgow M.C.C.

The club held its annual general meeting on March 9th, when the secretary's report and accounts were passed. Last year's membership was the lowest for many years, but the club events were well supported, and there is a distinct revival of enthusiasm among members, so that 1911 is likely to prove a big success.

New officers and committee were appointed, Mr. D. S. Baddeley being elected hon. secretary; and the following events were decided upon: Spring and autumn hill-climbs, a flexibility trial, a petrol consumption test, a twelve hours trial, and a fast and slow climb.

A practical suggestion, made by Mr. D. S. Baddeley, and very wisely adopted, was that of deputing the organisation of some of the events to various officials, so as to stimulate a little rivalry to make each succeeding event more successful than the last.

Cornwall M.C.C.

A general meeting will be held at the Red Lion Hotel, Truro, at 6.30 p.m., on Saturday next, to arrange runs, competitions, etc., and other business. All local motor cyclists are invited to attend.

North Staffordshire M.C.C.

At a meeting held on the 9th inst., it was decided to form a motor cycle club for the district of North Staffs, the club to be called the North Staffordshire Motor Cycle Club. H. Madeley, 46, Hamilton Road, Hanley, was appointed hon. secretary. A further meeting will be held at headquarters the Albion Hotel, Hanley, Staffs, on the 23rd March, at 7.30 p.m., to elect committees, etc. All motor cyclists in the district are invited to attend this meeting. The club's subscription is 5s. without entrance fee.

Assembly on the occasion of the N.W. London M.C.C. opening run.

Club News.—

Sheffield and Hallamshire M.C.C.

The above club held its annual committee dinner at headquarters, on Thursday, March 9th. After dinner an excellent musical programme was submitted, and an enjoyable evening ended with the distribution of the prizes gained in the recent winter reliability trial.

Western District M.C. (London).

In spite of the very unfavourable weather conditions, the paperchase held recently proved most enjoyable to all those who participated therein. Although the hares were only allowed a start of six minutes they successfully evaded capture, due no doubt to the many false trails they succeeded in laying. Subject to confirmation by the committee, the hares, C. Caudwell (3½ h.p. Triumph) and J. V. Armstrong (3¾ h.p. Premier), are the winners of this event.

Torbay and District M.C.C.

The opening meet of the above club, fixed for 19th February, but postponed at the last moment owing to inclement weather, will take place, weather permitting, on the 19th inst., at 11 a.m., at the entrance to the Recreation Ground, Torquay, to be followed by a run to Honiton (where arrangements have been made for lunch), *viâ* Newton Abbot, Teignmouth, Starcross, Countess Weir, etc. All riders are cordially invited to attend. At a committee meeting held a few days ago, it was decided to have no Sunday fixtures after the opening run.

Herts County A.C. (Motor Cycle Section).

HARROGATE TOUR.

The arrangements for this tour are almost complete. The regulations will reach all concerned in a few days. The enthusiasm is such that the tour ought to be even more successful than last year. There will be a record turn out, of which there is no doubt. It will be rather interesting to see how the new system of marking for teams will work out. The riders who gain 100 per cent. in their respective classes, and who at the same time gain the highest marks for their clubs and set the standard for the whole teams, win no mean honour.

In the lightweight class at the hill-climb the cubical capacity has been increased to 340 c.c. There will also be a class for standard touring singles.

PETROL CONSUMPTION, MARCH 25TH.

The object of this competition is to get particulars of the consumption of different machines under normal running conditions. The results of some of the 1911 competitions will be partly based on consumption, so that this event at the beginning of the year will give members the opportunity of finding out the mileage covered per gallon.

No special devices for reducing consumption will be allowed under any circumstances. The course selected adjoins the Great North Road near the 17th milestone. It is a circular course of about four miles.

North Middlesex M.C.C.

At the club's concert held on March 4th, which was a great success, it was announced by the chairman, Mr. W. H. Browne, that the opening run would be held on Sunday, March 26th, starting from headquarters at 10 a.m. Members and motor cyclists interested will be heartily welcomed by the officers of the club. Members will be advised as to the destination.

Coventry and Warwickshire M.C.

The president, Mr. J. V. Pugh, J.P., presided over a good attendance at the A.G.M. on Friday evening last, when the secretary's report was passed, and the treasurer's statement received. This showed the club to be in a very sound position, having £205 18s. 11d. in hand. The North Wales run originally fixed for June 24th, was altered to Whitsuntide, at Mr. Holroyd's suggestion, as on the former date it was thought that a run to witness the naval review at Spithead, Portsmouth, would prove more popular. Most of the club's officers were re-elected at the meeting, and the following added to the list of vice-presidents: Messrs. J. K. Starley, J. R. Haswell, Eric W. Walford, and I. B. Hart-Davies. In consequence of the resignation of Mr. Eric W. Walford, who has worked hard as secretary since 1906, Mr. Geoffrey Smith, 19, Hertford Street, Coventry, was elected in his stead, with Mr. B. Gorton as assistant hon. sec. The trials hon. sec. will not be an official position, but different members will be invited to organise the various trials. A smoking concert which followed the business was much enjoyed.

Next day the opening run and speed-judging competition was held, members meeting at the residence of the president at Allesley. On this occasion competitors were asked to nominate their own speed, and then followed a paper trail of unknown length, laid from a 12 h.p. S.K. Rover car, kindly lent by Mr. J. K. Starley, by Mr. W. Grew among the Warwickshire lanes. The course was *viâ* Eastern Green, Gibbet Hill, Stoneleigh, Cubbington, Offchurch, Long Itchington, skirting Southam, and a mile or two from Dunchurch—twenty-four miles from the start—the "hare" was lying in wait to take the times. The road surface was rather greasy, which fact, combined with two hills of more than average severity, helped to upset the competitors' estimates. The results were announced during a smoking concert which followed tea at the Dun Cow, Dunchurch, as under:

1.	T. C. Pearson (1911 Triumph and sc.) ...	45s.	slow
2.	Geoffrey Smith (3½ Ariel)	2m. 45s.	slow
	A. Wright (1911 Triumph)	3m. 0s.	slow
	A. V. Sumner (3½ Ariel)	3m. 0s.	slow
	J. R. Haswell (1910 Triumph)	6m. 0s.	slow
	T. Pountney (Rudge-Whitworth and sc.)	6m. 15s.	slow
	V. A. Holroyd (Rudge-Whitworth & sc.)	8m. 15s.	slow
	A. Elson (1910 Triumph)	11m. 30s.	slow
	S. Wright (two-speed Humber)	12m. 0s.	slow
	A. C. Riley (1910 Triumph and sc.) ...	13m. 15s.	fast
	A. Mackenzie Cott (8 King-Jap)... ...	15m. 0s.	slow
	E. Martino (Rudge-Whitworth)	23m. 45s.	slow

Opening run of the Coventry and Warwickshire M.C. last Saturday. The motor cycle section.

Club News.—

The Oxford M.C.C.

In the notices which have been published in this journal concerning the open hill-climb in April the date has been incorrectly given. The test is fixed for April 8th and not April 1st.

Leicester and District M.C.C.

The first round in the Edwards Cup Reliability Trial will be run on March 23rd, and the route will be Wigston, Husbands Bosworth, Theddingworth, Lubenham, Market Harborough, Oadby, and Wigston. Course to be completed three times.

Worcestershire M.C.C.

The annual general meeting will be held at headquarters, Hop Market Hotel, Worcester, on Saturday, March 18th, at 8 p.m. All motor cyclists in the district are cordially invited to attend. All information concerning the club may be had on application to the hon. sec., Mr. Ernest W. Cook, the Foregate Press, Worcester.

North-west London M.C.C.

The club's opening run took place on the 5th inst., the destination being the White Horse, Hockliffe. There was a splendid turnout, over forty members and friends being present at the start. The route lay through Edgware to Brockley Hill, thence to St. Albans, where the main Coventry Road was joined. After lunch at Hockliffe, H. Karslake led a number of members to a steep hill near Sharpenhoe, but the speed here was somewhat restricted owing to the presence of a "gentleman in blue." The run was altogether a great success and thoroughly enjoyed by all.

Cumberland County M.C.C.

At the annual general meeting of this club recently held, the year's programme was drawn up and includes five hill-climbs, two non-stop runs, two reliability runs, two speed-judging contests, a petrol consumption test, and several interesting club runs. Numerous prizes have been offered for competition during the year.

A joint hill-climb with the members of the Westmorland and West Lancashire Clubs has been arranged at Kirkstone Pass on Good Friday. The joint hon. secretaries, Messrs. W. S. Clark and J. W. Moffet, will be glad if any intending members will communicate with them at 15, Lonsdale Street, Carlisle.

Motor Cycling Club.

This year's Jarrott Cup Competition bids fair to beat all previous records, both as regards interest and number of entries, writes E. Gwynne, the trials hon. sec. Entry forms are rolling in fast, amongst them being such well-known riders as L. A. Baddeley, W. H. Wells, G. Lee-Evans, H. Karslake, R. O. Clark, A. M. C. Scott (of the Exeter club), Messrs. A. J. and G. Stevens, J. R. Haswell, O. L. Summers, Southcombe May, R. C. Owen-Wells, F. Mussell, W. W. Douglas, and P. Phillips, etc. The inclusion of a class for sidecars, for which a special cup has ben offered, has been received with enthusiasm, and there is no doubt that many entries will be received. The new section route has also met with approval. As the Easter tour headquarters are at Yeovil, which is on the line of route, competitors will have the opportunity of meeting their club members.

Streatham and District M.C.C.

A special general meeting was held at the headquarters, the Crown and Sceptre Hotel, Streatham Hill, on March 3rd, to pass the balance-sheet for 1910 and to deal with other business that was held over from the general meeting held on January 27th last.

The following events have been fixed for April; 8th, speed-judging competition; 14th, Easter tour; 29th, members' hill-climb; 30th, joint breakfast run with the N.W. London to Worthing.

Messrs. Nye and Co. have kindly presented the club with two gold medals to be awarded for hill-climbing. Mr. W. V. Sherwell, the late captain, has also presented to the club gold, silver, and bronze medals to be awarded for club attendances during the season.

A new grade of membership has been instituted, *i.e.*, a 5s. scale, that admits a member to affiliation with the A.C.U. and to all social events and lectures, but he will not be advised of club runs, etc.

Newport (Mon.) and District M.C.C.

The annual general meeting of this club was held at the Queen's Hotel on March 4th, and was well attended. The report showed a balance in hand. The first club run will be on Good Friday. Intending members should communicate with J. Pritchard, Central Chambers, Newport (Mon.)

Mersey M.C.

The club's opening run to Llangollen and back took place on March 5th, when more than twenty members made the journey. A social has been arranged for to-day (Thursday, March 16th), at 7.30 at headquarters, and it is hoped all members will make a special effort to be there.

Middlesbrough and District M.C.C.

A most interesting and instructive lecture was given on Wednesday, March 8th, by Mr. J. Telford, A.M.I.M.E., on "Heat and Heat Engines," with special relation to the Scott machine. The animated and keen discussion which followed showed the great interest the members had taken in the lecture. The clear and thoughtful manner in which Mr. Telford dealt with the many queries addressed to him showed that he is a master of his subject.

Birmingham M.C.C.

The opening run of the Birmingham Motor Cycle Club is to Stratford-on-Avon on April 1st. On the 8th some members will doubtless take part in the Oxford Motor Cycling Club open hill-climbing competition on Irondown Hill, near Deddington. The Easter tour is to Lynmouth, commencing April 14th. On the 29th the members are holding a closed hill-climb, and on May 13th a speed-judging competition will engage their attention. The hon. secretary, Mr. Vernon C. Brook, Oakdene, Cambridge Road, King's Heath, will be glad to hear from prospective members.

Herts County A.C. (Motor Cycle Section.)

The opening run is on Saturday next, 18th inst., starting from St. Albans (afternoon), the route being as follows: St. Albans, Watford, Berkhampsted, Chesham, Chenies, Rickmansworth, Northwood, Pinner, Stanmore, Elstree (*via* Brockley Hill), and St. Albans. The total distance is 52 miles, and in it are included four good hills. Competitors to gain a club medal must make an absolute non-stop. All further particulars may be obtained from R. G. Goslett, 9, Park Square West, Regent's Park, N.W.

Bristol B. and M.C.

The club's first social was held at the Queen's Hotel, Clifton, on the 4th inst., when the motor section spent a most enjoyable evening, over 100 being present.

It is expected that a larger team will compete in the inter-match with the Exeter and District Club, which will be run off again shortly, and great care will be taken to see that all rules, etc., will be strictly adhered to.

Mr. Philip Grout, of Roseville, Warmley, Bristol (hon. sec. Motor Section), will be pleased to send entry forms for the club's open hill-climb on April 29th next.

WE "SEE OURSELVES AS OTHERS SEE US."

La Revue de l'Automobile in a recent issue, writing of the motor cycle in France, makes the following statements: "It must be said that the motor cycle suffers greatly from two evils—the first of which is the disdain of the press (we are the only journal having a motor cycle column appearing regularly); and the public, which is not stirred up in the matter, disinterests itself generally from the subject. The second is the exaggerated exigencies of the tariff as regards motor cycles, which will die of the tax if the question is not taken up again both seriously and vigorously. Several English machines were on view at the Salon, and their construction revealed a remarkable effort in the direction of strength and comfort. English motor bicycles deserve to be known, and we think we shall interest our readers in describing minutely several in the columns reserved for motor cycles, to date from next month." This is surely a compliment from our Gallic cousins, who, when they study the excellent points of the best motor cycles in the world, will readily understand how a big section of the British public is going mad with enthusiasm over the fascinating sport and pastime.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Overhead Valves on Touring Engines.

[?] I intend getting a Bat-Jap or an Indian, if I can get these machines fitted with P. and M. gear. Would the 6 or 8 h.p. J.A.P. engine with mechanically operated (overhead) valves be suitable for sidecar work? I think the makers recommend the side by side valves, but the overhead valves are used on the best car engines, and I, personally, prefer them. Do you know of any disadvantage in them? Is the P. and M. gear suitable for a powerful machine and sidecar?—T.M.

The first named machine is fitted with a P. and M. two speed gear, but the second named has its own gear, which is also a very good one. The 6 h.p. or 8 h.p. J.A.P. with mechanically-operated valves is quite suitable for sidecar work, but we should certainly advise you to be guided by the manufacturers. The side by side type of valves are preferable on a touring engine. The overhead type are considered more efficient, but there is a danger, if the cotter pin falls out, of the valves dropping into the cylinder and causing serious damage. Yes. the gear in question is good and quite reliable.

3½ h.p. Machines and Sidecars.

[?] I have ordered a 3½ h.p. Triumph, 1911, free engine. I want a sidecar for use therewith, passenger nine stones, self eleven stones weight. At Olympia Show both Messrs. Mills-Fulford's and Montgomery's representatives recommended fixed wheel on score of lightness. Local agent strongly recommends castor wheel on score of easy running compensating for additional weight. Passenger not afraid of walking exceptional hills. Please advise. Should above combination take hill from Melmerby (Cumberland) to Alston (on Penrith-Alston Road), rising 1,500 feet in five miles with good surface, or would passenger have to be dropped ?—S.J.M.

We should certainly advise you to have the lightest type of sidecar you can, as you are having a fixed gear machine of the minimum horse power we recommend for passenger work. Whether or not the machine would take the hill mentioned depends upon the maximum gradient. With a 5¼ to 1 gear you would probably be able to manage 1 in 12 or 1 in 14 without shedding your passenger.

AN UNCOMMONLY MIXED GROUP—SIDECAR, SOCIABLE, SINGLE AND TWIN CYLINDER BICYCLES.

Although only four motor cycles appear in the above group, all are representative of different types. There is a twin-cylinder bicycle, a twin-cylinder sidecar a single-cylinder bicycle and a single-cylinder sociable.

Blue Flame from the Silencer.

[?] I have been riding a 2 h.p. Quadrant for a considerable time—now I have much difficulty in starting. When I lift the exhaust valve engine emits a blue flame from the silencer. Could you tell me the cause of this? —E.R.

The difficulty in starting is probably due to the fact that you are using heavy petrol, which the old-fashioned carburetter by no means appreciates. You may make the machine start a trifle more easily by shaking the tank thoroughly before starting up. This will tend to make the petrol vaporise. Also inject a small quantity of petrol before attempting to start. The blue flame at the exhaust is probably due to incomplete combustion; the flame from silencer is due to unexploded charges issuing therefrom when fired by the hot silencer.

Touring in Germany.

[?] I am going to Germany shortly, and I would like to know the following: (1.) What are the customs charges for a motor cycle (1½ h.p. Moto-Rêve)? (2.) Will my driving licence do, or shall I have to take out a new one? If so, what is the charge? (3.) Will my Inland Revenue licence do, or shall I have to get a new one? (4.) Will the registration mark be all right if I put G.B. over the number at the back? (5.) Is there any charge for adding G.B.? I shall remain in Germany for about six months, as I am going on business.—H.A.R.

(1.) The customs charges will be about fifty shillings. (2 and 4.) You will have to take out an international pass, which you can obtain from the Auto Cycle Union, or the Automobile Association and Motor Union. We advise you to join one of these bodies if you tour abroad. The cost of the licence is 10s. 6d. for a motor cycle. (3.) A Local Taxation licence is not necessary, but you will have to pay full German taxes, particulars of which we regret to say we have not before us. The customs triptych, which you can take out through any of the recognised motoring organisations, will be available for six months, so you must be careful not to exceed that time for your stay.

Too Much Petrol.

When going up hills on my 2¾ F.N., F.N. carburetter, if I open the throttle above quarter way it slows machine instead of accelerating it. The same result is noticed when on stand. When running on stand the main air intake is very moist with petrol, also a spray of petrol issues from the extra air intake. There is nothing on the float to cause this high petrol level. How would you remedy this? —T.B.

We should say that, owing to wear the inlet valve is opening too much, and may be the spring has lost its original tension. It seems that the machine is getting rather too much petrol. Probably if you fit an extra air inlet to the induction pipe the trouble will

Two Italian riders mounted on a Triumph, who recently made an extensive run, starting from Padua, and journeying via Verona, Brescia, Como, Lake Maggiore, and thence over the border into Switzerland to Bellinzona. The return journey was via Novara and Milan.

cease. Check the petrol level, as may be the float needle is allowing petrol to pass, and needs grinding in. Crocus powder is the best for this operation.

Best Way to Control a Two-speeder.

I am having a new Douglas two-speed, cone clutch, motor cycle. Will you kindly answer the following questions: (1.) Need one depress the cone clutch to change gear if exhaust valve lever be lifted? (2.) Need one lift exhaust valve lever if cone clutch be depressed (*i.e.*, to change gear)? (3.) In descending a long hill is each of the following methods allowable and harmless: (a) Descending simply with exhaust lever raised? (b) Descending simply with the cone clutch constantly depressed? (c) Descending with exhaust lever lifted, as well as with cone clutch depressed (the disadvantage being that one must rely for braking on the front brake, as clutch and back brake are operated on same side)? (d) Is it permissible to shut the throttle at top of hill, put change lever in "free" position, and coast down without other action whatever? This would allow use of back brake. Then, on nearing bottom of hill, open throttle, lift exhaust (or else depress clutch, or both), and slip in gear, and then drop exhaust? —A.A.M.

(1.) It is better to depress the clutch to change speed, but be careful not to race the engine unduly. Raising the exhaust valve lifter and ignoring the clutch pedal will do as well if you find you can manage this better. (2.) It is better to lift the exhaust valve lifter when changing gear, operating the clutch at the same time. (3.) The best method is to keep the top gear in if the hill is an ordinary one, and raise the exhaust valve. If the hill is steep, put in the low gear and raise the exhaust valve. Keep the clutch in when descending a hill and you have the engine as a brake. If you want to coast down a hill fast you should certainly put the lever in the neutral position and coast down. Take the clutch out, however, before engaging the top speed and wait until the pace is reduced somewhat.

Starting Difficulties.

I have a 5 h.p. twin Rex with "Fitall" two-speed and free engine. I find great difficulty in starting even on the stand, though everything seems in good order. I have recently fitted a B. and B. carburetter, with the use of which I am not acquainted. Will you kindly say (*a*) in what positions the short and long levers should be for starting; (*b*) at what positions for slow and for fairly fast riding—accumulator ignition? Also, what is best to use for softening or making more pliable a canvas and rubber ⅜in. belt which has become exceedingly hard and stiff?—ANXIOUS.

There should be no difficulty in starting the machine if the carburetter adjustment is correct. First of all examine the carburetter. Move the short lever into the position in which it is closed; begin by keeping it closed, and set the throttle a third open. Having flooded the carburetter, the engine should start without difficulty. Too large a choke tube usually causes sluggish starting. Having got under way, open the air lever until the best mixture is obtained; this will be apparent by speed of engine accelerating. For fast driving advance the spark as far as the engine will take it without knocking and according to the road conditions, and set your throttle at the pace at which you require to travel, adjusting the air to suit. Unfortunately we know of no means of softening a rubber belt.

No Licence for an Unused Machine.

On the 1st of January, I had the usual papers sent to me for the renewal of my motor cycle revenue tax—£1. Up to the present I have not obtained this licence, and as I am about to sell my machine shall I be liable under any clause if I do not take out the licence, say, for another three or four weeks, as during that time I may be able to sell my motor cycle?—G.S.

If you have used the motor cycle since the licence became due, that is to say, from the 1st January, you are liable for the tax. If, however, you have not used it during the present year we do not see how the authorities can compel you to pay.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"Two stroke" (Market Harborough) desires private owners' experiences with 1911 Scott, especially with regard to automatic lubrication and water-cooling.

"Rev. D.M.D." (Barry). Bedelia four-wheeled runabout.

"S.S." (Birmingham). 3 h.p. Lincoln Elk.

"Liverpudlian." Mabon clutch.

"G.F.B." (Epsom). N.S.U. and Millennium gear fitted to a 1903 Triumph. Also Whittle belt.

"W.H.P." (Liverpool). Fit-all engine shaft gear, Mabon clutch, and Osborne four-speed pulley fitted to 3½ h.p. Rex and sidecar.

"H.W. (Leicester). 5 h.p. 1911 Indian.

"T.M.J." (St. Annes). 8 h.p. No. 7 Chater-Lea-Jap with sidecar.

NEXT THURSDAY!

THE MOTOR CYCLE

Eighth Annual Spring Number.

SPECIALLY ENLARGED.

One Penny as usual.

Manchester Tyre Depot.

Users of Avon tyres will be glad to hear that the Avon Indiarubber Co., Ltd., Melksham, Wilts, have opened a branch at 229, Deansgate, Manchester, for the sale of Avon tyres.

Long Distance Rider's Tyre Equipment.

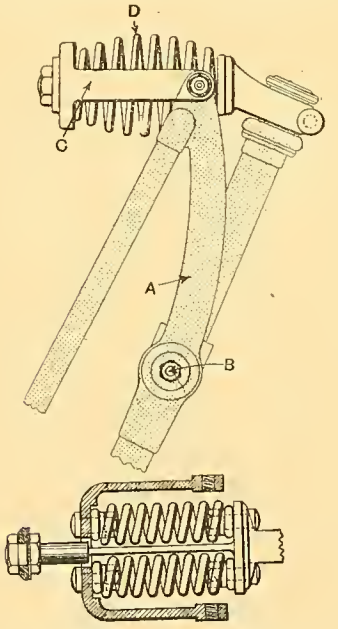
Mr. Harry Long, who is attempting to cover 26,000 miles in a year, from January 1st to December 31st, 1911, selected Kempshall tyres for his Triumph motor cycle.

A Colonial Record.

In sending us a photograph of their staff in the form of a greeting card, Messrs. F. B. Stewart and Son, of Poona, India, inform us that they have sold in five years 136 Triumph motor cycles, and wish to know if this constitutes a colonial record. Perhaps some of our other colonial readers could answer the question. In addition to the above machines, the firm are sole agents for Royal Enfields, and were the importers of the first Scott two-stroke machine into India.

A Triumph Spring Fork Improvement.

A new type of spring fork has been patented in the names of the Triumph Cycle Co., Ltd., and C. W. Hathaway, which may eventually displace the present form of spring arrangement in which two springs are used. The usual rocking girder fork A pivoted at B is employed. At the top of the girder is a stirrup C and between this and the steering head is arranged a



A new Triumph patent spring fork.

single coil spring D which acts both in tension and compression. By this means greater range of movement is permitted without risk of fracture. It should be stated that the Triumph Cycle Company are not, at any rate as yet, manufacturing this construction. It is at present undergoing a prolonged test. An alternative arrangement of double coil springs covered by the same patent is shown in the lower illustration.

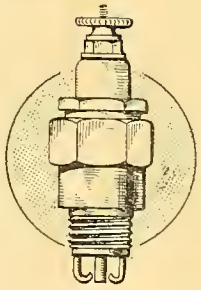
A Useful Repair Patch.

Mr. V. Surridge, 53, George Street, Camberwell, S.E., has introduced an entirely new repair patch, which, if the rider has run short of solution, may be induced to adhere to the tube merely by warming it. Care, however, should be taken to clean the tube thoroughly beforehand.

A Busy Season.

Everything points to the motor cycle industry having a record year in 1911. Messrs. Godfrey and Applebee inform us that new machines have a very short sojourn in their premises, while the Hendee Mfg. Co. tell us that even at this early stage in the year their sales have eclipsed all previous records.

The Forward Sparking Plug.



The Forward Cycle Co., 9, Edmund Street, Birmingham, who have been particularly successful with their Forward belt fastener, now send us a sample of a sparking plug which they are selling under the same name. Its chief feature is the shape of the electrodes (which are pure nickel), the ends being formed in such a manner that oil or moisture does not easily bridge the gaps, and so cause difficulty in starting or failure to start altogether. The body is specially treated to prevent rust, and the centre rod is of stout nickel.

A British-made Dry Battery.

Messrs. Siemens Brothers and Co., Ltd., Caxton House, Westminster, S.W., are probably the largest manufacturers of dry batteries in the world. Their battery is known as the "Siemens-Obach," and is made in all sizes suitable for motor cycles. A perusal of the company's catalogue will elicit many interesting features regarding the use of dry cells. In the first place it is pointed out that their internal resistance is exceedingly low, a fact which determines the output of the current, while the cells possess great powers of recuperation. The catalogue gives other useful information, pointing out as it does the advantage of carrying two batteries and employing a two-way switch, so that one battery may recuperate when the other is working. It is not only for ignition purposes that the "Siemens Obach" battery may be used, but also for lighting lamps, and the manufacturers supply special bulbs in which a tungsten filament is employed, and is so manufactured that the bulbs are durable and will stand a reasonable amount of vibration.

LOST AND FOUND.

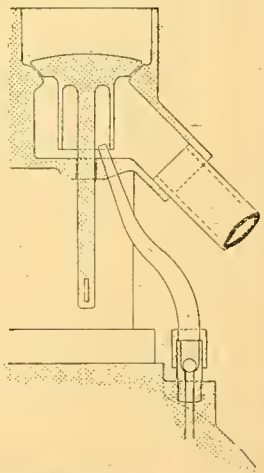
We receive many letters regarding accessories, etc., both "Lost and Found," which we are unable to find space for. As these particular matters are of interest to two persons only, viz., the finder and the loser, we have decided to keep a list of such articles, and all that are notified to us will be inserted in this list. Should we receive a letter from the finder which corresponds to the article lost, the two persons will be put into communication, but it must clearly be understood that we cannot enter into correspondence on the matter beyond this.

Speed and Distance Tables.

Major F. R. Lindsay Lloyd, clerk of the course to the B.A.R.C., has sent us a copy of the new Brookland speed and distance tables which he has been compiling during the winter. Many additions have been made to the old book, such as a lap time table with a 10ft. line (which is that used for motor cycles), a speed table for the test hill, etc. The book, which is priced at 1s., and can be obtained from the B.A.R.C., Carlton House Regent Street, S.W., will be of the greatest service.

A Valve Cooling Device.

The exhaust valve cooling device illustrated herewith is the invention of Mr. Harry Reed, of H. Reed and Co. Deansgate, Manchester, the makers of



A clever method of cooling the valve stem.

the Dot motor cycles. It will be noticed that the stem is protected by a metal sheath, and a draught of air ejected from the crank chamber release valve and conducted by a short pipe impinges on the valve stem. The patentee informs us he is too busy making new machines to place the article on the market, but will be pleased to negotiate with engine makers who would like to fit the cooling device under royalty.

THE MOTOR CYCLE

SPRING NUMBER

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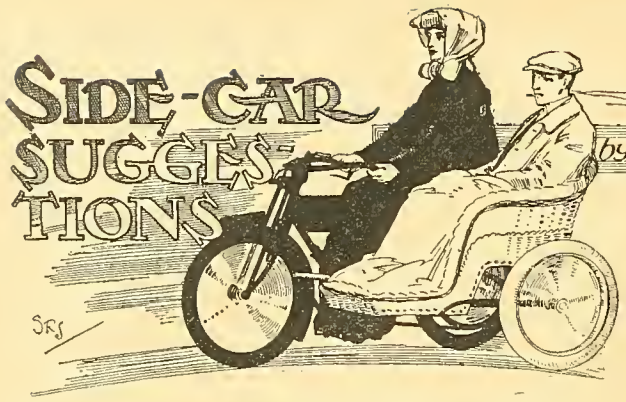
Ten Years' Progress.

THE article published elsewhere in this issue on ten years' progress in motor cycle design shows the remarkable strides that have been made in a period which is really comparatively short, and affords a striking testimony to the pluck d tenacity of the few who took up the manufacture these machines and have clung to it through ck and thin. When this journal was first launched motor-propelled bicycle was looked upon almost as oy for the amusement of those cyclists who could ord to speculate in what old push-pedallers used deride as a poor sport. It is true their sarcasm s often not undeserved, because the earliest types motor cycles were very very far from perfect, and e abandoned by many who had the idea that they uld always be more or less troublesome and require han with a mechanical bent to look after them.

Those who had the courage of their convictions l never relaxed their efforts in the manufacture l sale of motor cycles are now reaping their reward the shape of an unprecedented demand. Their ctical experience, gained at considerable expense, enables them to supply the readers of this journal h absolutely reliable, if not quite perfect, mounts. course, we have not reached the ideal, perhaps never shall, because the dictionary meaning of the n is "visionary" as well as "perfect." The ideal some is a "go anywhere and do anything" machine h the least conceivable trouble or worry, and when tor cycles reach that stage it is possible that interest riding them will turn to indifference. The great raction to the majority of present day motor cyclists he need of some amount of skill and attention if is to get the best out of the machine. Not the constant worry and anxiety of earlier days—that would be too troublesome—but just sufficient knowledge and nerve to give that added zest which is almost essential to the success of any pastime. That is practically the position we occupy after ten years' progress. Some have abandoned the industry altogether, either by consent or through adversity; others have only temporarily relinquished it, and are now re-attacking it with increased fervour, but the select few who have never looked back merit the greatest praise; the saviours of our pastime, to them should be accorded every honour and our most cordial appreciation.

Ten years hence, if we are to believe all we are told, so extensive will be the improvements in the motor cycle that the conversion to its use of practically every able-bodied person who now rides a push-cycle is inevitable. We shall welcome the recruits, but are we wise in sighing for the time when the motor cycle will be a "perfect" machine? When finality is reached, stagnation is close on its heels and enthusiasm a thing of the past.

The general utility of a reliable machine no one can cavil at; in fact, it is the consummation aimed at by every manufacturer, and most devoutly wished by every rider, but there is a degree in perfection which marks the zenith of a machine's success. This stage has not yet been reached, but it is conceivably possible before the lapse of another decade, and it is not unreasonable to suppose that the attainment of absolute perfection will bring deterioration in the sport, for there will be no call for the exercise of that skill, nerve, and endurance, without which our pastime would be robbed of its chief attractions, and the keenness which is now so robust would slowly, but no less surely, fall into decline.



SIDE-CAR SUGGESTIONS

by Beatrice Langston and P. W. Bischoff

ONE of the reasons for the boom in sidecars is undoubtedly due to the fact that people are beginning to realise that almost any motor cycle will pull a passenger over normal roads. This is certainly true within well-defined limits. The following suggestions are intended primarily for the owners of fairly old and not very efficient machines who desire to get the best possible results out of them for sidecar work. Their (lady) friends are constantly saying, "Why don't you get a sidecar, and take me out?" and the answer is apt to be, "My engine isn't good enough." We, who have tried it, know that any amount of fun can be got out of a single-geared, clutchless single-cylinder and sidecar, and we give these tips as an encouragement to others to take the plunge.

Chief Factor for Success.

The great thing to bear in mind is attainment and maintenance of engine efficiency. Therefore have the cylinder off, clean out all deposit, get the valves well ground in, have only a hair's breadth between the stem of the valve and the tappet, use as small a jet as possible in the carburetter, gear low, and be prepared to maintain a low average pace. People talk of overheating as being an exploded theory; we know of many bits of hills which we can get up comfortably if we have averaged fifteen miles per hour to the foot, but which absolutely stop us if we have averaged twenty miles per hour. Therefore keep down the engine speed, suit your normal pace to your gear (something between 5 and 5½ to 1 suits us nicely), and learn to "nurse" your engine. I say this: Suppose you are travelling at eighteen miles per hour and approach a hill of about 1 in 15. Your pace will drop considerably. You can keep it up by opening the throttle, but you will suffer for it later. It is better to climb it steadily at about ten or twelve miles per hour and arrive at the top with a cool engine. Similarly, it takes considerable will-force to "hold her in" going down-hill. But if your gear is low you will suffer for ev burst of speed. The gear you can take and the p you can maintain depend entirely on the efficiency the handling of the engine. Remember, again, t climbing resolves itself solely into a weight-lift contest, so leave at home those cameras and fancy baskets and other odds and ends.

The writers—Miss B. Langston and Rev. P. W. Bischoff.

Personal Considerations.

Have the sidecar on the left or near side and le to mount from the other. This is much nicer for passenger and also better when the car is em There is absolutely no reason (beyond the five shil licence) why the lady should not take her turn in saddle while you enjoy a smoke in the car. should wear a fairly wide skirt, not too long, ei ordinary boots or shoes with some form of leggi or boots with very long uppers, such as are used rinking. She will be most comfortable in a rink cap; the front veil had better be backed with white net, as this is a much better protection aga dust and wind and does not blurr the view as chi does. As she is going to ride a gentleman's mach her coat had better be double-breasted and quite full as her skirt. When she mounts she should st on the pedals or footrests and fold her skirt inw from each side and then sit on it. This gets it r out of the way of the belt and keeps it in place. the man pushes off from behind he can jump into sidecar from the side, while the lady keeps the p down by lifting and dropping the exhaust va The man should learn how to get either in or of the car while travelling—it takes quite a l pluck to do it the first time, especially getting but it becomes astonishingly easy with practice. get in, place the right hand on the side of car and jump forwards inwards, landing with the foot on the side of the Then swing the right round behind the left and down. To jump out, the left hand on the side the car and the right on the edge, facing well wards. Leave go with the hand, swing the left foot wards and outwards, and on it, leaning well back. right foot lands in front of left and stops one falling one's face It is not so c plicated as it sounds.

When Either can Driv

It is a distinct advantage each of the pair to be able drive. For instance, it

ecar Suggestions.—

ll to use detachable tubes, d, when a puncture occurs, put in the spare and let the ly drive for a spell while the re man sits in the sidecar l repairs the damaged tube. ain, when a hill crops up ich conquers the engine the nal plan is for the lady to lk up while the man rides. e will much prefer to take the empty sidecar while walk. And her lighter ght will score here, and a really long day's trip it great relief to take turn turn about in the saddle. bviates any chance of tired sts and backs. Moreover, re are days when one feels t one is not driving well. ere is always a possibility of the other member of party being "in form." So let us urge with all phasis the advisability of the lady learning to ve. It is much easier to start with a sidecar than is solo, as the machine cannot fall over, or side-, or do anything silly, and it can be driven much re slowly while the first steps are being learnt. is necessary to take corners slowly at first. nember that the vehicle has to be steered by the dle-bars and by them alone; no amount of body-ding will make it change its direction unless the nt wheel is deflected. Some people find it hardest turn to the side on which the sidecar is attached. e passenger can help here by leaning well out ards the corner.

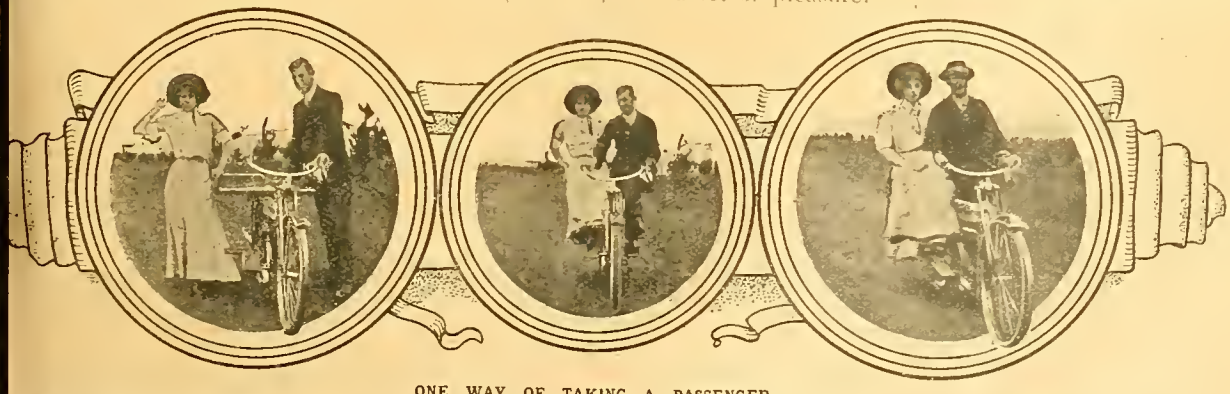
Not the least advantage of a lightweight.

Troubles to Expect.

The belt is the most likely part to give trouble, as only to be expected, seeing that it is pulling nearly able the usual load. So don't get angry if a ener pulls out occasionally. We always use a vas and rubber belt, and find this kind grips so ch better than any other that the little trouble en is negligible. Remember that half an hour's k before setting out is far less irksome than a gle roadside stop. Front wheel punctures are remely rare, and we have never had one (touch foreheads!) in the sidecar tyre. The back does give out occasionally, but, by the use of detachable tubes and mending these *en route* as previously suggested, even these punctures lose their terror. As regards the engine it will be found that rather, but not much, more oil is necessary than when driving solo. Give too much rather than too little, but one very soon gets to know "the feel" of the engine asking for oil. Give a glance periodically at the sidecar attachments. We once went miles after shedding a bolt and had a rare game finding it when the outfit began coming to bits. Also, don't wrap up spare belts or tubes with the sandwiches—it does not improve either! By the way, it is an excellent plan to carry a spare outer cover at the rear of the sidecar seat when on tour; one can then feel contented. It is entirely out of the way, and looks positively handsome.

With Bigger Engines.

Those who possess bigger and more powerful engines have absolutely no excuse for not fitting a sidecar. Our previous suggestions apply to old or small machines. With a good modern 3½ h.p., even single-geared, one can do wonders after practice. Using a single-cylinder single-geared bicycle and sidecar, we have been right over the Lecht Pass from Tomintoul to Coch Bridge. But even then a lot depends on "nursing the engine." Don't over-drive—that's the secret. Reduce weight by scrapping all unnecessary fittings such as carrier, stand, toolbags, and lamp, if possible. The sidecar seat hides a multitude of—things! If the bicycle has a second speed, go up hills as slowly as possible, otherwise the engine will inevitably lose efficiency. Of course, for real "comfy" speed-work with a sidecar there is nothing like a big, variably-geared twin, but the man who hesitates to get the passenger seat because he only possesses a 3½ h.p. single is losing the chance of a lot of pleasure.



ONE WAY OF TAKING A PASSENGER.

Mrs. C. Kirby of Johannesburg, in sending the above photographs, says: "I thought you might like to see our way of getting about the country. My husband and I have done several hundred miles together on the seat in comfort. We get *The Motor Cycle* regularly and enjoy reading different motor cyclists' experiences." It will be noticed that the special seat mentioned is wide enough for two.

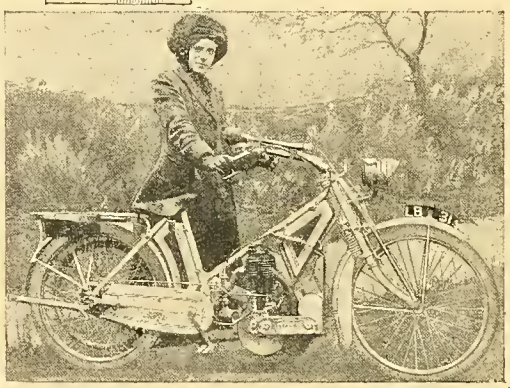
THE LADY MOTOR CYCLIST.

By LOTTIE BEREND.

ANOTHER motoring season is opening and prompts the question, Is it not the time for lady enthusiasts to come out and indulge in the pleasures of the sport?

There are certainly many more ladies who ride motor cycles nowadays, but still they are far too scarce. Why is it? Surely not the fear of a breakdown, as the mechanical parts of the machine seldom give trouble. Ladies of a mechanical turn of mind can rely upon themselves for minor repairs, and when anything beyond them turns up, should ask a motor cyclist friend to assist them or send to a thorough repairer. They need have no fear when alone on the road, as personally I have found everyone is ready to proffer assistance.

The influence of Mother Grundy no doubt acts as a check on the progress of lady motor cyclists, but it will not last for very long. I have often heard it said, "Fancy a girl riding a motor cycle!" Why not? Many years ago the same was said about cycling, and now it has become quite universal. To my mind motor cycling is a far superior pastime to cycling, with its ceaseless grind—not a pleasure by any means.



TWO LEADING LADY MOTOR CYCLISTS.

Miss Lottie Berend, whose article concerning motor bicycling for ladies will be perused with interest.

Mrs. C. C. Cooke, who is responsible for the organisation of the first ladies' competition at Easter.

Preference for Medium-weight Machines.

Manufacturers have been busy designing and building ladies' motor cycles, and there are now quite a number from which to make a suitable selection. Unfortunately, the majority are lightweights, which to my mind, although most suitable for beginners and, may I say, potterers, are but a stepping stone to the heavier and more powerful mount. It is evidently the idea among manufacturers that ladies will only ride lightweights; possibly some ladies prefer them, but the majority would, I think, favour a medium-weight machine with a clutch to assist at starting and in traffic. From my own experience I find the 3½ h.p. machine far nicer than any other I have ridden. My first mount was a Zenith Bicar, which weighed about 2 cwt. (I found this far too heavy and cumbersome). I then became a lightweight enthusiast, first riding a 1909 Moto-Rêve, and later a 1910 model. However, since experiencing the delights of possessing some reserve power, I am convinced that a 3½ h.p. has the advantage of greater reliability—the paramount point in touring—and is far easier to control in traffic.

My own machine is a 3½ h.p. 1911 Brough, weighing something like 140 lbs., and even in the few weeks I have ridden it I have found the advantages it has over a lightweight. I find there is any amount of reserve power, even if a passenger is taken on the carrier, and hills which once required a considerable amount of l.p.a. can be surmounted with the utmost ease.

Further, I have found that a lightweight requires a good deal of attention to keep it in its best running order, whilst a heavier machine, a rather more powerful mount will average at least twelve miles an hour, even if it has been somewhat neglected and allowed to get in very bad condition.

For the Encouragement of Lady Riders.

The motor cycle provides a constant source of enjoyment, and, in addition, is an excellent tonic. For these reasons alone I am anticipating meeting a large number of ladies on the road in the near, I hope, but probably distant, future.

With the near approach of Easter long tours organised by different clubs have to be thought about, and among these the Herts County A.C. (motor cycle section) has for the first time instituted a special class for lady riders, and it will be interesting to learn the results of this innovation. How many ladies will compete, I wonder, and what machines will they ride?

This trial is, I know, causing a great deal of interest among lady enthusiasts, and the silver cup presented by *The Motor Cycle* is well worth struggling for. Every winner can be indeed proud of the trophy. Everything is being done to encourage ladies to participate in the pastime, but still they seem slow in response. Is it diffidence or want of pluck? It need be neither, as all who have once begun will never regret it.

The North Middlesex M.C.C. has lately been established, lady members are especially invited, and competitions will be arranged for their benefit.

The Six Days' Trials.

It is early days yet to write of the Six Days, but as many amateurs are likely to turn these trials into an opportunity for a pleasant holiday, may I express the hope that our convenience at checking and petrol stations will be better studied than in the past? In previous years, whether the trial has been of the hub or spoke kind or otherwise, there has been a tremendous lot of scrimmaging, both to obtain replenishments of oil and petrol and to get signatures on the control cards.

These delays quite spoil the pleasure of competing, they recur in various forms many times a day, and a little businesslike organisation would soon eliminate the nuisance. In addition they may result in loss of marks to the genuine lightweights and other steady-going machines. On a short control where there is only a margin of a few minutes between maximum and minimum time, the waste of five minutes at a control may have serious consequences to a struggling rider.

Drip-feed Oil Pumps.

As many readers know, a popular modern type of oil pump has an adjustable drip-feed valve fitted below its nozzle, and is provided with a spring above the piston; consequently, as soon as the pump is filled with oil by pulling up its handle, the spring forces the plunger down and drives out the oil, the rate of supplying being controlled principally by the adjustment of the drip valve, which can be set to provide a larger or smaller aperture, *i.e.*, a greater or less resistance. A regular correspondent writes to condemn these pumps. He states that he made and used a sample pump of this type as long ago as 1905, but he found it impossible to secure a regular rate of oil feed, because the spring does not exert even pressure from the top to the bottom.

Personally, such criticism strikes me as beside the mark. It is more than probable that with such a pump the rate of drip would vary according to the compression or elongation of the spring. When the pump is full the rate of drip might be thirty drops per minute, and when the pump is nearly emptied the rate might drop to ten, or even less. But with the modern instantaneous push-down type of pump the entire charge is fed through to the engine in a second or two, and any distribution to the charge, however irregular, must be an improvement.

It is possible to adjust the valves of these pumps so that the feeding of a charge is spaced out over the period in which twenty miles are covered, and, however uneven the timing of the drips may be, such distribution is better than the usual cycle of "over-lubrication, accurate lubrication, under-lubrication" yielded by the older pattern. I also have made experiments, and I found a marked difference with various diameters of pump barrel.

With a long barrel of narrow bore, and a correspondingly lengthy spring of constricted diameter, the feed was certainly irregular, though the charge could be arranged so that about a quarter of it entered the engine in each quarter of the hour's riding for which a pumpful sufficed. With a short thick barrel, and a correspondingly short spring of large diameter, the rate of drip seemed more constant.

My main criticism of these pumps is that occasions arise when we want to inject a whole pumpful of oil into the engine without delay, and then it is a nuisance to lean down and open the screw-valve. Hence I should recommend the addition of a short by-pass and tap, so that the screw-valve can be momentarily "cut out" when the engine demands a whole charge in a hurry.

Probably if the idea of pressure lubrication gains favour with motor cyclists the pressure of a coil spring will be discarded for pressure provided by the engine. If this is utilised, it can be made absolutely even and constant by means of a blow-off valve. Most readers will be aware that many cars employ exhaust pressure for such purposes; this is rather apt to be dirty, so that many car engines now possess a neat and reliable air pump, worked off the camshaft. As the motor cycle engine becomes more efficient, some form of forced lubrication is likely to come into vogue, at any rate upon racing machines.

Boycotting Infinitely Variable Gears.

The scandal of boycotting infinitely variable gears continues, and I hear of several projected speed events in which the veto is to be applied. The practice may be regarded from two standpoints, the technical and the sporting.

The technical view is that it must be a mistake to discourage what is actually the efficient and desirable form of gear. Car designers have been sighing for an infinitely variable gear for years past, and to-day are little nearer their ideal than they were in the age of the 3½ h.p. Benz. We motor cyclists already possess the choice of two or three (within limits) infinitely variable gears, and we show our appreciation by barring them from some of our most interesting hill-climbs, which advertise our hobby and industry tremendously.

From the sporting standpoint it is dishonest to call an event "open" when we funk meeting a particular machine in it. It is as unfair to bar an unusual design as it would be unfair to bar the best examples of standard design; what an outcry there would be if a leading club announced a hill-climb for which Triumphs, Rex, Bradburys, Rudges, Indians, etc., were ineligible. The least that promoters can do, if this state of funk continues, is to be frank. Instead of hiding their timorousness under the subterfuge of verbiage, let them say outright "all X—— machines are barred from this event, because they have an enviable habit of carrying off the lion's share of the awards."

The next move lies with the A.C.U. Its permit is required for all open events, and it will not add to its reputation by licensing these evasions.

TEN YEARS PROGRESS 1901-1911 IN MOTOR CYCLE DESIGN

IT seems difficult to believe that ten years ago precocious infants were being spanked by irate parents for saying they had seen a "sicicle" going uphill "all by itself"; that within a similar period precocious engineers were receiving the key of the street for suggesting to cycle magnates that a *motor* bicycle was worth designing and making. Yet such are the facts; and the purpose of the present article is to picture the evolution of sundry pioneer machines which made their bow to a suspicious and irreverent public ten years ago, and are now breathing through their silencers with quiet malice the unwelcome sneer, "I told you so!"

First, hats off while we mourn the dead. Not every firm which saw the start is in at the death. What has become of the Minerva, once in the guise of a somewhat hideous red and black finish the sole motor cycle exhibit at a Stanley Show

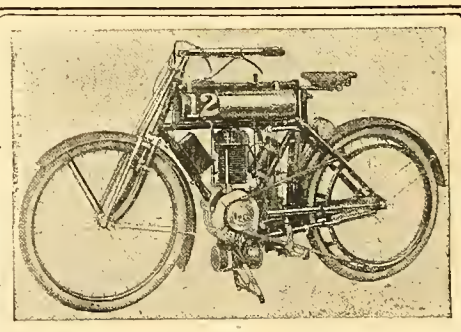
What of the front-driven Werner, which used to side-slip and half kill you, then jump on you and pummel your prostrate body, finally cremating you when the huge carburetter ignited? What of its immediate posterity—I remember the "protected" carburetter, ensconced in a small tin box with sharp edges, the flat engine pulley with leather washers threaded thereon, which was fitted to the English-made article, and similar fiments?

What of the Excelsior-M.M.C. —one of the first, reliable and powerful motor bicycles ever made? What of the Ormonde, with Kelecom engine under the saddle, behind the seat tube, and projecting sparking plugs in wait to send a record shock up the marrow of your thigh bone? A petro tear dims my moistened eye as I muse on these or great names; turn we with relief to the stalwart f who have survived the slings and arrows of outrage fortune, and are reaping rich rewards for their c stancy to-day. Let the order be numerical, lest er embitter congratulation.

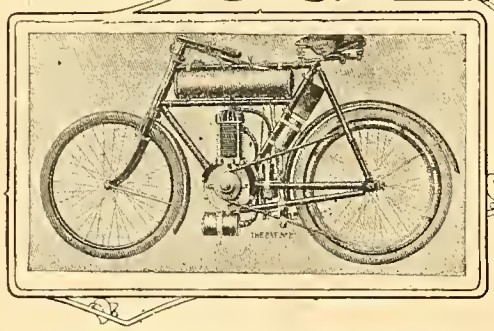
An Outline that has Survived the Test of Tim

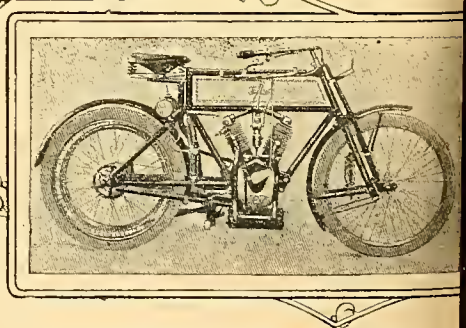
My first memories of the Bat do not inclu Tessier, though no doubt he was there, behind scenes somewhere. I almost wonder if Bowen Bashall and some others were out of their prams th In their places I recall a burly, genial individ named Batson, who drove a M.M.C. car, designed the Bat—"best after tests." Even as ea as 1903 it had a spring frame, and a great reputat in speed events. The makers were prone to asc its alarming velocity to a patent pulley, composed rocking sections, designed to obviate belt s Incredulous outsiders like myself preferred to adm the De Dion engine (2¾ h.p.) and gasometer c buretter, together with an exceptionally rigid fra and many tuning secrets. At any rate, the early B were enviably invincible fr the first.

The first spring frame model of 1903.



The outline has remai practically unchanged ever sin The 1903 model scored hea in the reliability trials, and e since the Bat has been one of favoured few which can b tears to the eyes of the in cunious enthusiast. I ques if any makers have retai their original frame closely, or so steadfa set their f against pedal





A TRIO OF EARLY BATS.

The earliest model Bat, introduced in 1902.

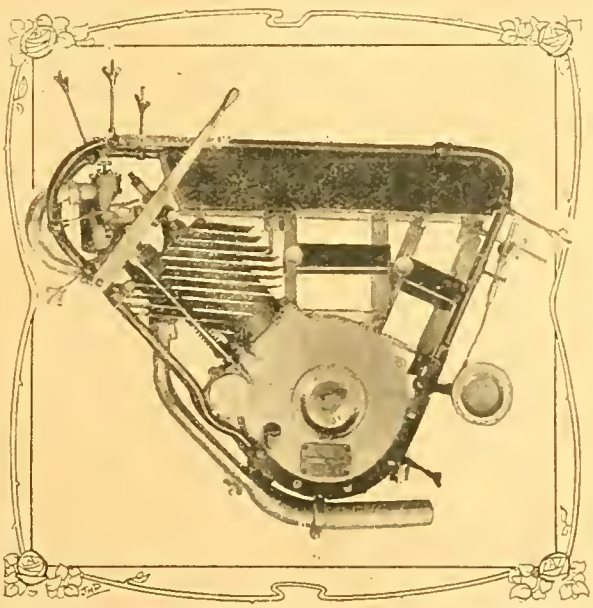
The forerunner of twin-cylinder Bat-Japs.

Years' Progress in Motor Cycle Design.—

r and the elusive and deceptive merits of l.p.a. til quite recent days A. G. Reynolds used to dis- t himself on one of the old 2¾ h.p. Bats, which st have covered its 50,000 miles by now, if it yet athes petrol. It ought to be handed over to the tish Museum at its decease.

The Early Browns.

don't know where Brice was in 1902-3, but the wn was already with us in the guise of the saucy tling represented in our photograph of Coles ving in London at the end of the Glasgow run of 3. No thrilling hill-climb sprints had as yet sted its merits, but the 1902 price list modestly rted with regard to a still earlier model "it could nb steep gradients." Rather a notable merit is possession of a spray carburetter, which, the kers remarked, prevented your petrol going stale ou laid it away for long. e engine was luckily y of 1¾ h.p. at a erous estimate, which was as well when you note was neatly clipped to a t frame by two small minium lugs on the k case. The modern wn engine would convert f into a rotary type er similar conditions. dging by the 1902 cata- e, the makers were quite rdly pleased to think microscopic oil tank and p on the top tube lered it unnecessary to b down every twenty s to oil up. A delicious h in the naive catalogue ts out how easily the d belt can be slipped in the event of any ngement which it is not nvenient to remedy at the nent." This machine weighed no more than 75 lbs. y slow steps the Brown has climbed from such a est beginning to its present eminence, and the h.p. engine of to-day consumes no more petrol in ven mileage than its lilliputian grandparent.



The earliest Motosacoche engine set and fittings, now ten years old.

The First F.N.

he F.N., which comes second, also spat its first smell into the scandalised atmosphere about the 1902, and *its single-cylinder engine was of mm. bore and 60 mm. stroke.* Fancy Victor royd hitting Birdlip on such dimensions! It had outside flywheel, with a 1in. wide flat belt pulley le; one guesses there was a bit of rock in the ings before long, if the engine ever got humming. is noteworthy that this is the only F.N. model h had the standard diamond frame. Its makers quick to realise that power-propelled cycles re- ed cradled engines, and that aluminium clips spelt ble. (Don't I remember my belt coming off on her make because the engine had twisted round, was peering forrards from under my left leg!)

This particular F.N. engine stood up vertically from the junction of the main down and seat tubes, and its transmission was better than most, because a wooden rear belt-rim provided a good co-efficient of grip. The following year saw a 2 h.p., with cradle frame, enclosed flywheels, and castiron crank case.

The hint in the catalogue that the engine bearings for 1903 would be *very* long doubtless alludes to a sentence above, and covers tales of woe. This engine was years ahead of its time in that the exhaust valve was mounted in front of the cylinder for the sake of cooling, and that a lever was interposed between cam and tappet to reduce wear.

The 1904 model was the far-famed 2¾ h.p., which in its day was second to none. Many of these engines are still running, and running well; it was on one of them that W. H. Wells made his name. It was swiftly followed by its big sister, the 3½ h.p., and the first four-cylinder, which caused a sensation I have not forgotten. Enriched by a hundred detail improvements and a large increase of power, the four-cylinder has been the F.N. Co.'s stand-by for several years now, though the shaft-driven two-speeded lightweight has kept it company of late. But no modern invention has made quite the stir that the Belgian rider Osmont's tour of the Riviera on the first "four" created. The F.N.'s evolution is marked by an early grip on basic principles: I recall days when their spray carburetter was almost the only sample obtainable, and many of their prehistoric ideas still masquerade as "startling novelties" on other machines when show time comes around. We have not heard the last of the exhaust valve in front of the cylinder.

Motosacoche.

Some of the younger riders imagine that the world-famous little Motosacoche is a latecomer to our ranks. Not a bit of it. I first heard of the "motor in a bag" as early as 1901, and it actually made its bow to Swiss riders in 1900, under the auspices of the brothers Dufaux of Geneva. In those days it lacked its familiar black metal protectors, the power unit being mounted in a tubular frame, and shielded by flaps of leather; but so long as it depended for ignition on a somewhat flimsy and lilliputian accumulator system it failed to make strong appeal to the British long-distance tourist. As soon as the miniature magneto had transformed it into a sound roadster it began to acquire its public over here, and now it is a household word. Long may it remain so.

The Pioneer Chain-driven Machine.

The Phelon has hyphened a Moore on to its original cognomen, as it has become more aristocratic. In its 1900 days it scarcely deserved a

Ten Years' Progress in Motor Cycle Design.—

double-barrelled name, for it had a tin crank case, and its proud owner measured out his oil in an old cartridge case every twenty miles and poured it in by hand. It has, however, stuck faithfully to its main outlines for eleven years—witness the engine position, chain drive, and efficient silencer.

In 1901 a number of machines were sold, of which a survivor is still teuf-teuffing about Ireland. But the real P. and M. boom dates from 1905, when Mr. Moore astounded the motor cycling world by making one of the two clean ascents of Birdlip in the big trial. Since then North-country riders especially are familiar with his demure habit of seeking out phenomenal hills, and selecting the worst knuckle for a standing start on that invincible low gear of his.

Miss Muriel Hind on an interesting old type Singer, with engine, magneto, and carburetter located in the rear wheel.

Single Lever Control.

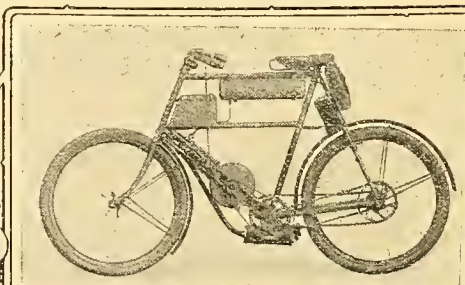
The name Quadrant still has power to thrill my bosom. Many readers must recall the grey tank with the unwieldy legend "The Quadrant Autocyclette" painted thereon in red letters an inch high; or the famous single lever control, whereby one long black handle switched on the current and controlled both throttle and spark, thus eliminating the twist handle and the third lever; or the little niche on the "interrupter block" wherein a small brass disc (or a nimble sixpence) must repose ere a start was possible. With 1 h.p. and 1¼ h.p. Minerva engines, the Quadrant dates from 1900, and in 1902 nearly a thousand machines were sold.

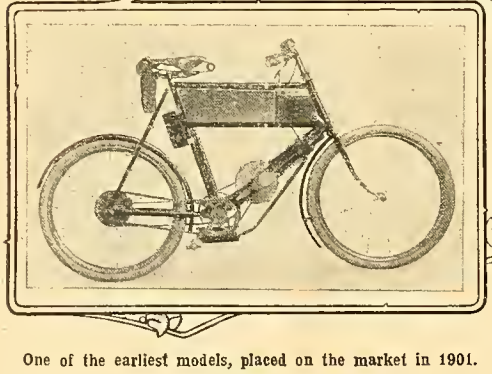
In 1903 the first Quadrant engine, possessing the stupendous power of 2 h.p. made its bow, and, thanks to the simple control and one of the first reliable contact-breakers I ever struck, the machine became famous. By 1904 horse-power had begun to tower and I well remember the sensation created by the 3 h.p. when it came down to demonstrate its paces on hilly Devon.

Before this time Tom Silver's name was a household word, thanks to his End-to-end record in 1904 (of which I still possess the original schedule marked "confidential"), the Glasgow to London ride against time, motor cars, and other thrilling marvellous achievements. In 1905 the 3½ h.p. with its now familiar dimensions of 81 mm. by 88 mm. came out, and carried all before it. Did not seven of these machines arrive at Groat House in the first End-to-end reliability trial of 1906, thrashing us all on every hill? Since then there has been a little misfiring in connection with Quadrants, of a commercial rather than a mechanical nature, but their innumerable friends are glad to see them coming again with the old rush. By the way, the Quadrant was the pioneer in spring forks, and most people were glad to copy their pattern more or less closely for a time.

The Rex followed the advice given to young brides and "began as it meant to go on." Bursting on our view with a 1¾ h.p. engine at the National Show in 1900, it was the only machine to climb the hill in the Crystal Palace ground without l.p.a.—and l.p. *was* l.p.a. in those days, remember! The next spring it won races on the Palace track, but was simultaneously superseded by a more

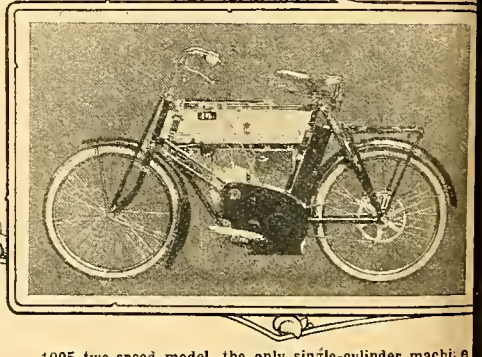
The first Phelon and Moore ever built.





One of the earliest models, placed on the market in 1901.

THREE STAGES OF THE P. & M.

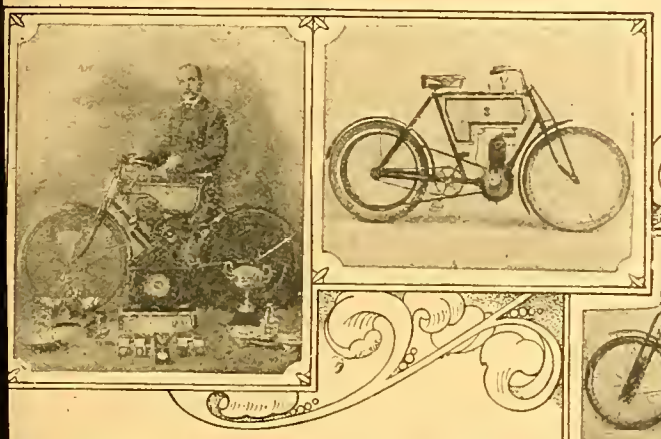


1905 two-speed model, the only single-cylinder machine to climb Birdlip in the trials of that year.

en Years' Progress in Motor Cycle Design.—

ith vertical engine, and the half-tone illustration of his shows that the Rex designers had a keen insight, or the standard machines of to-day are on exactly

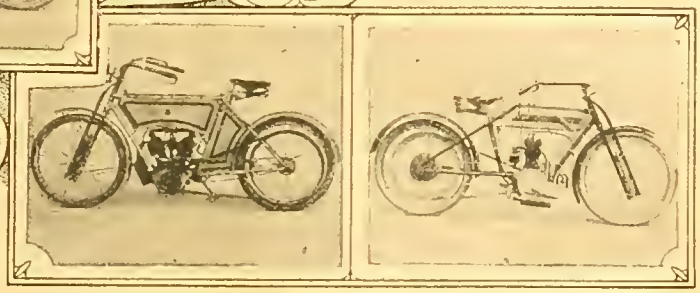
ILLUSTRATING THE REX DESIGN IN STAGES.



The first pattern of Rex motor bicycle, introduced in 1901.

1903 model with baffle plate silencer.

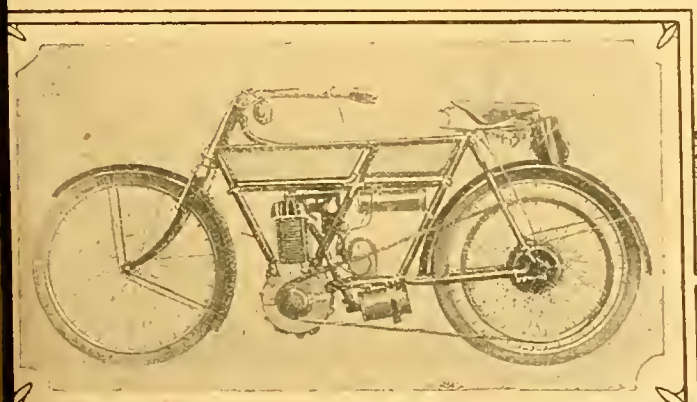
e same lines, so far as the silhouette of design es—vertical engine, tank, double-girdered rks, etc. Since then we owe many sensations the prolific brains behind the Rex—the silencer st with the cylinder, the beehive exhaust box, the opped rear frame, the twin tyre, the rear hub tch, the twenty-five guinea mount, the cantilever at, the foot brake, the Muriel Hind dromedary, d a host of hill-climb thrills, road and track cords.



1903 the first twin Rex.

1908 3½ h.p. two-speed model, the first with a dropped frame.

A 1903 Roc. Note particularly the low frame, long handle-bars, free engine clutch, and magneto at rear of engine.



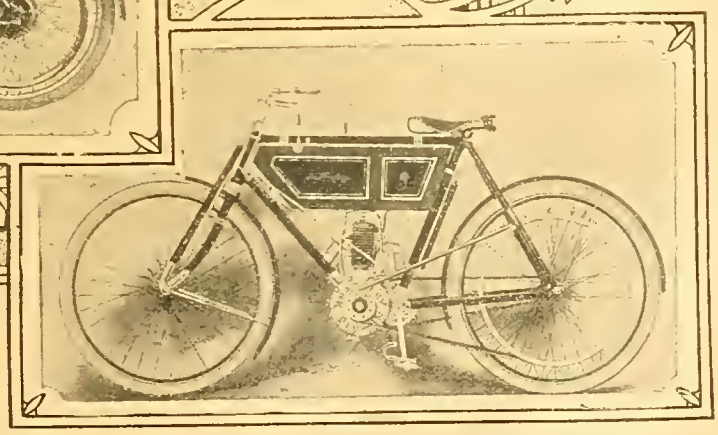
But the present machines all bear a ial resemblance to that 1903 vertical—y are chips of the old block, and are ely copied. Note how gradually the nes were lowered and the handle-bars le longer and wider.

The Originator of the V Belt.

V-shaped belts may sound like an accessory, but I believe Mr. Stones, of Lincoln, was the first rider to employ a V belt on a motor cycle; his original sample, made up in the Rex Works, was finally entrusted to the Lincona people, and a mighty trade they did with poor beggars like myself, then afflicted with round and flat belts in mountainous districts. The C hooks were the chief bother, until Mr. Edward Lycett came to our rescue (about 1903) with his eyelet rivets.

The Roc used to hail from Guildford when I first remember it; it always had the low frame, vertical engine, and trussed steering head so usual to-day, while it can certainly claim to be the ancestor of all free engines. It was running in 1902, and scoring in trials by 1903, in spite of the fact that its sponsors never believed in pedals, and preferred footrests from the very commencement, which a 3 h.p. engine rendered practicable even on the hills round its Surrey nest.

Magneto ignition, a Gerard under Eisemann patents, was also a Roc introduction. The first Roc I ever rode belonged to A. Wright, and



The Bradbury motor bicycle of eight years ago.

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had a live axle clutch, but no change speed gear. The free belt-rim was mounted on a large aluminium-spoked wheel, and excited great envy; no other frame that I know of allowed the rider to sit in the saddle with his feet on the ground, and owing to the clutch it was most comfortable in London traffic.

At one time the members of the Guildford club were mounted on Rocs almost to a man, and when they brought out sidecars their "swank" against us fixed gear men was sickening. Nowadays, as everybody knows, the Roc gear, under its own name and by licence to the Rex and Humber Companies, is still one of the sidecarist's chief resorts. Future historians will write of the Wall Auto-wheel and the torpedo tricycle—they are infants in arms as yet.

Early Triumphs.

The Triumph entered the industry comparatively late, for to the best of my belief it never passed through the 1¼ h.p. Minerva engine stage, which figured in the youth of most of the earlier pioneers. As I first remember it, it was fitted with the 2 h.p. Minerva engine clipped below the front down tube (which was shortly afterwards replaced by a 2½ h.p. inclined J.A.P.), and was distinguished by a spray carburetter (then rather uncommon), a better bicycle than most engines could boast, and several yards more festooned low-tension wire than the average jigger of those days—but then Triumphs never stinted their customers.

A shade later a very taking model came out with a 2½ h.p. J.A.P. engine, vertically mounted in the proper place, but—shades of Hulbert—with a carburetter in front of the cylinder, and an equilateral-triangle toolbag under the saddle.

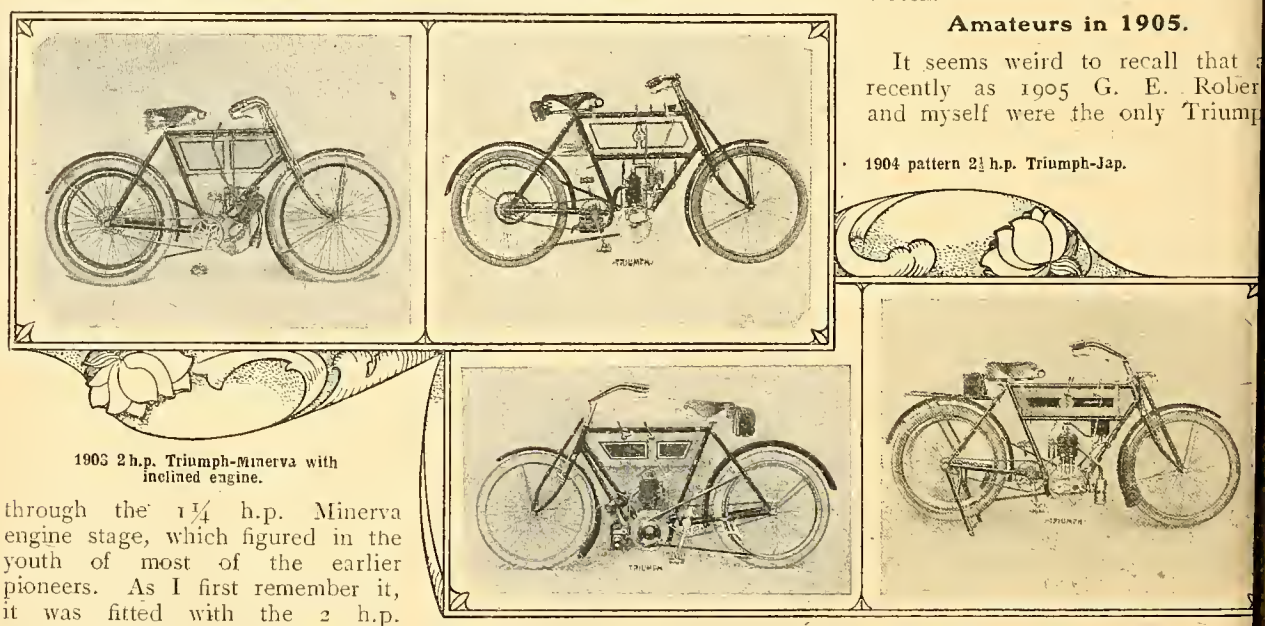
Then followed the 3 h.p. Triumph with Fafnir engine, and soon after there appeared the first 3 h.p. Triumph bicycle with "own make" engine, upon which two or three enthusiasts and myself fastened at once with a perfectly inspired eye.

Even with accumulator ignition this was a most desirable and satisfactory little mount. But with the addition of a magneto (I owned one of the first batch so fitted) and also with a spring fork (I broke the experimental fork with but a single coil spring) it became positively enthralling. Mind you, it had not the Triumph quality of to-day, as shown in maintenance of power, and, tune you never so wisely, a good percentage of the original 3 h.p. was missing after 1,000 miles; but it was reliability itself, and at that time nobody asked for anything more.

Even the accumulator type was super-excellent the usual flimsy make and break, mounted on a base soft as butter with screws of putty, was not good enough for Mr. Schulte, and he employed two sturdy contacts, mounted vertically in a rigid case.

Then came the standard 3½ h.p., and all records began to be broken, until to-day we have grown used to the gilding of the lily, and the annual appearance of ingenious new fittings, all perfect at the first time of asking, occasions no surprise—I need only mention the neatness of the handle-bar controlled carburetter and the ingenious multiple disc hub clutch.

ILLUSTRATING THE PROGRESS OF THE TRIUMPH.



1903 2 h.p. Triumph-Minerva with inclined engine.

1904 pattern 2½ h.p. Triumph-Jap.

1905 3 h.p. model, the first with Triumph engine.

1906 pattern, the first with a spring fork, stand, and carrier.

Amateurs in 1905.

It seems weird to recall that as recently as 1905 G. E. Rober and myself were the only Triump amateurs in the London-Edinburgh, and that in 19 Lister Cooper and myself were the only Triump amateurs in the Six Days. Perhaps the fin achievements of the 3 h.p. were its climbs at Fe hurst, Haslemere, with F. Hulbert and R. W. Ayton (not to speak of the sandbags then employed by t A.C.U. in its hill-climbs, on a weight-equalisati basis). Considering the date and the modest dime sions of the engine, the speed and certainty of th climbs was remarkable.

N.S.U.

I had almost forgotten a well-tried mount hail from abroad in the shape of the N.S.U. The 19 models had surface carburetter and tiny engines the down tube. This firm was one of the first adopt the high-tension magneto with separate c and had a vertical engine in a diamond frame ignited in 1903. In 1904 the outline of the N.S.

Years' Progress in Motor Cycle Design.—

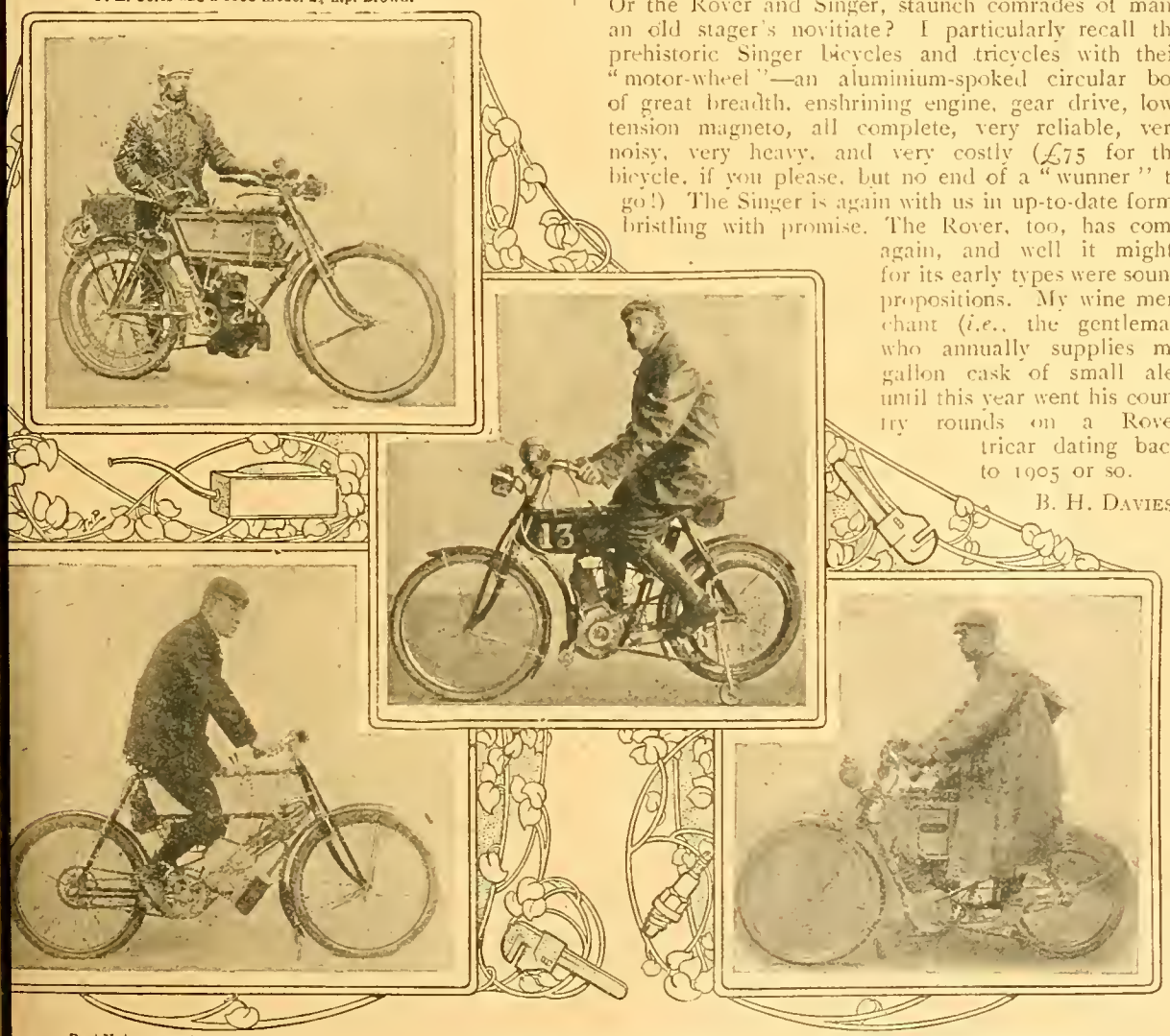
s little different from modern practice, and in detail h items as overhead mechanically-operated valves, ay carburetter, etc., were already well established. When I reflect that at my first introduction to motor ling one stop per mile was not thoroughly dis-rtening, that we were prepared to pedal *hard* up ldford High Street, that we expected a belt ppage every twenty miles at least, that we knew ignition would stall us within fifty miles, that a 's preparation was a usual prelude to a run; and trast such a state of things with to-day, when a ice of my acquaintance has covered 2,000 miles m the factory door without a compulsory stop, can only ejaculate in pious admiration that in ten rs the trade has accomplished a real miracle.

Firms which Retired Temporarily.

Nor must we omit sundry machines which have uetted with us like the "lady" in the three-card k, at one time being very much in evidence, at another far to seek. In this connection we recall the Ariel, especially the staunch little 2½ h.p. light-weight, ridden by Penzer, and the beautifully made 3½ h.p. with skew valve gear forced often to victory by Theo Hooydonk. Or the Kerry—perhaps the first 5 h.p. twin to be really rideable. Or the Clarendon-cum-Arno. Or the Excelsior, on which Martin and Sam Wright won so many victories, and a machine which I always regard as one of the most reliable of the older patterns—now brought bang up-to-date by the firm of Bayliss, Thomas and Co. Or the Humber—who of the old brigade has forgotten the ancient 1¾ h.p. and 2¾ h.p. chain-drivers, with their marvellous hill-climbing and side-slipping propensities? Many of them are still running, and after a brief period of absence they are again gloriously incarnate in the excellent Humbers of to-day, though the chain drive has gone. Or the Centaur, another chain-driver; did I not only last week meet a vet. riding one of the first machines the firm ever made? Or the Alldays, whose early model was almost as popular as the once famous "Traveller Voiturette"? Or the Rover and Singer, staunch comrades of many an old stager's novitiate? I particularly recall the prehistoric Singer bicycles and tricycles with their "motor-wheel"—an aluminium-spoked circular box of great breadth, enshrining engine, gear drive, low-tension magneto, all complete, very reliable, very noisy, very heavy, and very costly (£75 for the bicycle, if you please, but no end of a "wunner" to go!) The Singer is again with us in up-to-date form, bristling with promise. The Rover, too, has come again, and well it might, for its early types were sound propositions. My wine merchant (*i.e.*, the gentleman who annually supplies my gallon cask of small ale) until this year went his country rounds on a Rover tricar dating back to 1905 or so.

B. H. DAVIES.

HIGH-FRAMED MOTOR CYCLES OF BYGONE DAYS.
F. E. Coles and a 1903 model 2¾ h.p. Brown.



Bert Yates mounted on an old pattern chain-driven Humber.

W. Hayes on one of the earliest Kerry motor cycles, with Jack no-skid.

Tom Silver, who in 1903-4 carried off many awards on his 3 h.p. Quadrant.

LEADING MOTOR CYCLE CLUBS

J. T. Ward, one of the founders and present secretary.

F. C. Hunt, hon. treasurer.

No. 10.—MANCHESTER MOTOR CLUB.

ON the 14th of September, 1903, three enthusiastic motor cycling "Mancunians" sat in the cosy bar parlour of the Old Exchange Hotel, Fennel Street, and, conceiving the idea that other lonesome riders would appreciate the opportunity of combining themselves into the form of a club with a view to promoting the development and sport of motor cycling, made themselves into a scratch committee, one of whom, Mr. Herbert Brady, was elected secretary, Mr. Tom Kilfoy treasurer, and Mr. F. Bullock chairman. A general meeting was called and held at the Exchange Hotel on October 1st, 1903, which was fairly well attended by representative motorists and old push-cyclist veterans of the road and racing track, including the present secretary, Mr. J. T. Ward (an old motorist), Mr. F. C. Hunt (now the club's hon. treasurer), and other old motorists, who are still live members of the club. It was decided to call the new club "The Manchester Motor Cycle Club."

Mr. J. H. Baynes, a walking encyclopædia on all matters of sport, handicapping, rules, and general business, was elected the club's first president.

By the beginning of November upwards of forty members had joined, and on November 3rd, the date of the first A.G.M., Mr. P. H. Butler, a well-known rider in the T.T. Races and other open and club events, was elected first captain. By the end of February, 1904, with Mr. J. H. Baynes as president and the original committee, upwards of sixty members were on the roll book, and commodious and central headquarters were obtained at the present rooms, Albion Hotel, Piccadilly, on June 28th, 1904.

The club now consisting of car and cycle members, it was decided at the A.G.M., to alter the title to "The Manchester Motor Club."

The first official hill-climb for cycles and forecars took place early in October, 1904, at the "Snake," Glossop, when suitable medals were offered, and a special gold centre medal given for the fastest time. A silver rose bowl was presented by Messrs. Humber, Ltd., for a hill-climbing competition, to become the property of any member scoring two wins. This was eventually carried off in 1908 by W. Andrews. Early in February, 1905, a suitable testimonial and gold watch were presented to the first secretary and founder, Mr. Herbert Brady, for his untiring efforts in promoting the success of the M.M. Club. New members were gradually coming to the fold, and towards the end of the year the total membership had increased to about 100.

A. J. Moorhouse, trials hon. sec.

Percy Butler, one of the original founders and late secretary.

Jack Tytler, hon. press correspondent.

In 1906 Mr. Sawley Brown was elected president, and early on the membership jumped to 120.

Affiliated to the A.C.C. and M.U.

During that year the club affiliated with the Motor Union, and early in 1907 to the Auto Cycle Club, and subscriptions were increased to £1 for car with 10s. entrance fee, and 12s. 6d. for cycle members. In 1907 one of the popular founders, Mr. F. C. Hunt, was elected president, with Mr. A. J. Moorhouse captain, and the year was a most successful one, both financially and socially. The Easter tour to Beddgelert considered the tit-bit of the sea and the Whit Week Reliability Trials much enjoyed and well attended. In 1 under the popular presidency of Andrew Bell, the membership had increa to over 160 car and cycle members, a was deemed advisable to elect sepa captains for each section. Mr. A. J. M house was elected hon. secretary in of Mr. J. Fraser, and the club has no more able secretary than A. J. M much so that he was prevailed upo retain the post in 1908, and again in 1 In 1909 the club had a most succe sporting year, and many popular petitions were held. A team compete the M.C.C. trials for *The Motor* Challenge Cup, but ill-luck dogged of the representatives before arrival at the venue, accountabl some degree to the long distanc road. At the end of the season £100 was given in prizes by M.M. Club.

Mr. J. H. Charlesworth, an ex car driver, but a motor cyclis heart, took the presidency rein 1910, with Mr. A. J. Moorhous secretary and Mr. H. Reed as tain. The season was some marred owing to the death of Majesty King Edward and vagaries of the weather clerk; petitions were postponed, and club never seemed to get back old enthusiasm, although several scratch hill-climbs took place. To Manchester Club belongs the hono holding the End-to-end sidecar motor cycle records, H. Gibson a J. Moorhouse being club members.

The roll-call now numbers abou car and cycle members, the bank b is on the right side, and enthusias not waned, if one only considers that first committee meeting in 1911, wit Peter Bell as president, over £52 was given by various members to the prize fund for this year. At it is proposed to h 100 miles reliability tr Beddgelert, with a hill to determine the ul winner. The new pre is Mr. Peter Bell, sec Mr. J. T. Ward, captai H. Cunliffe, and hon. surer Mr. F. C. Several competitions ar in hand, and with petent touring and ent ment committees, 1911 fair to excel previous

A club run.

WILD-FOWLING

A SPORTSMAN'S USE FOR HIS MOTOR CYCLE

The writer with a good bag.

GLANCING cursorily at the title, the reader will probably wonder what connection there is between the two sports, so that it becomes necessary for me to explain at the outset that it is not my intention to advocate anything so exciting as the hunting of our furred and feathered creatures by means of our speedy mounts. Still, I have heard of many a hare or rabbit whose pace has been a bit too slow to enable him to escape the motor cyclist, and whose mangled remains have been transferred from the road to the rider's pocket after an exciting chase.

However, such incidents very seldom happen, and what I particularly desire to bring home to the reader in these notes is the great convenience of a motor cycle on any wild-fowling or shooting expedition. Those unlucky individuals who still have to use the ordinary methods of transit, viz., the suburban train, with its "fast" service, and the push cycle, in order to reach the sphere of operations of some form of outdoor sport, such as shooting, wild-fowling, angling, etc., and have not yet had the opportunity of acquiring a modern motor cycle, surely deserve sincere sympathy.

Do not Waste Time in Trains.

I wish, therefore, as shortly as possible, to interest those readers who are fond of a gun and rod as well as a motor cycle, and also their friends and acquaintances who shoot but have not similar advantages for reaching out-of-the-way spots. How much more expeditious it is to journey down on a power-propelled machine than to waste valuable time in attempting to catch a wretchedly slow train and probably doing the journey of twenty miles or so in the hour (a "feat" which is not of infrequent occurrence on many lines I could mention). With a motor cycle one starts from and returns to one's own doorstep without need to consult time-tables.

Sometimes devotees of the gun endeavour to save time by using a push cycle instead of the train, but a motor cycle would not only lessen the time taken in the journey by half, but also to a great extent that bugbear of cycling, "head winds," would lose their terrors. These are especially trying to anyone fatigued with a long afternoon walk and loaded with a gun and possibly a heavy bag of game.

Having, I fear at some length, presented the picture of the ordinary everyday sportsman who, having not yet learnt to appreciate the great advantage of using my means of locomotion, can frequently be seen going down by the local trains each afternoon in the season, I will briefly relate my own experiences on a motor cycle, so that the reader can compare the two, and, I hope, tell his sporting friends who do not ride to follow my example.

Preparations Before Starting.

After leaving business on a Friday evening I go over the machine thoroughly and see that all is in proper order for getting away on the Saturday with the least possible delay. I fill up with petrol and oil, and see that I have carbide in my lamp and a plentiful supply of paraffin in the oilcan, inflate the tyres, and all is ready. The next day I have only to change my everyday garments for others more adaptable to sporting requirements, and see that my pockets or bag contain a sufficient supply of cartridges, sling the gun across my back, wheel out my trusty little steed, and hie me away. Thus in less than an hour I am some twenty miles away from the City, and arrive at my destination fully an hour or two before it would have been possible had I caught the earliest train.

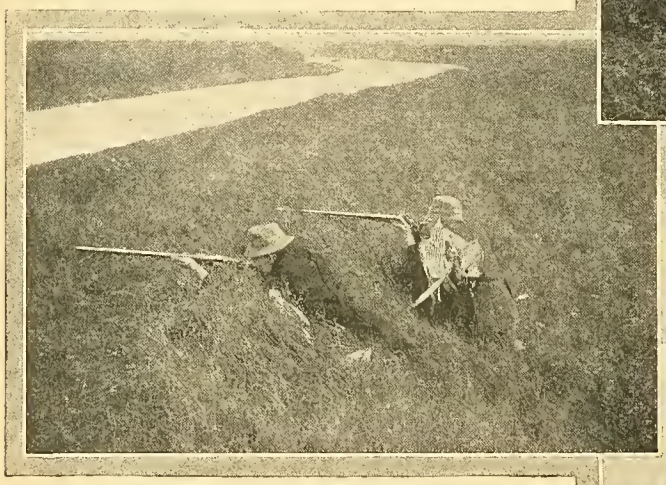
The proper way to carry a gun when riding a motor bicycle.

Wild-fowling.—

Placing my mount under shelter, I fill the generator with water, inject a little paraffin into the cylinder, and I am ready for a walk across the fields or mud-flats with my gun across my shoulder, alert and eager to let go at any fleet-winged or nimble-footed prey which may come within range.

Acres of Mudflats.

This walk may take me many miles across acres of heavy-going mudflats, chalk stones, over fences, and jumping dykes and ditches, which, however well the sportsman may be accustomed to them, will assuredly try him severely before the afternoon is over. I may have been lucky enough to have found some consolation for my labour in the form of a duck or two or an occasional rabbit or hare—it is nevertheless always pleasing to know that at the end of the return walk at the close of the day I have a steed patiently waiting for me at the nearest possible point on the road. Having arrived there, it is only a few minutes' work to turn on the petrol, light the lamp, sling the gun and bag over my shoulders and in less than an hour I am home again, sitting down enjoying my tea and a well earned rest. Having saved time and railway fare (which, after all, is a consideration with most people), I can then thoroughly appreciate the fact that motor cycling is indeed a good thing.



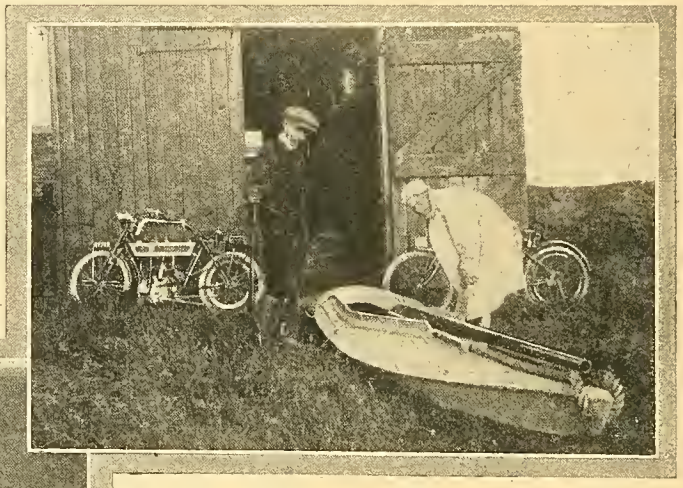
An exciting moment. Crawling up for a shot.

Distance an Economy.

Economising on railway fares from a practical standpoint does not really amount to a considerable sum after one has taken into account cost of petrol, wear and tear. A greater saving can be effected per annum by the sportsman motor cyclist by reason of his ability to reach places now inaccessible by railway train where good shooting can be had at a much lower rent than that asked for by the farmers who reside within a mile or two of a station—at least he who rents a shooting. It is hardly necessary to point out that in these days a good shoot cannot be rented within easy reach of one of our large cities without paying a very exorbitant figure. The further afield one goes the less one has to pay, and, therefore, as a journey of twenty miles or even thirty miles is a mere trifle to the motor cyclist, it must be obvious that money can easily be saved in the rent of the shooting alone.

Hints on Outfit.

Before concluding I would like to give the shooting motor cyclist a few hints as to equipment and the carrying of his gun. First of all, the weather is not always fine, and a good long coat should always be carried in case of emergency—a Burberry "slip-on" is just the thing, and can be highly recommended. A pair of thick cycling stockings covered with a pair of spiral puttees which can be taken off in hot weather and in the house, should you at any time drop in to see your friends. A woollen motor helmet and a pair of good thick shooting boots should always be worn. (This, I may add here, is not an ideal equipment for push cycling.)



Arrival at the boat-house. Getting out the punt.

Ready for home after a good day's sport.

Now as to carrying the gun, which is a very important matter to anyone who owns a valuable weapon which he spares no pains to protect from

Wild-fowling.—

any injury. My advice to the motor cyclist is always to carry the gun on his own back—the weight is not felt. Never trust the carrier. However well you pack and strap it on, screws will loosen and the barrels will soon chafe into bright places and loose their fine brown or blue appearances.

Best Method of Carrying a Gun.

The best method by far is to have a sling made by the local saddler at a cost of a few shillings. This is made from a long adjustable strap some one and a half or two inches broad and having at one end a shorter strap fastened at right angles, which short strap goes round the grip of the gun. The other end is terminated by a tubular piece of leather which slips over the muzzle end and is so tight that it cannot slip more than about six inches down the barrel. These slings can either be bought at any gunmaker's or made as I describe, and they are all that one can desire. The gun carried by these means is only liable to the minimum amount of risk of injury, for even in the event of a skid or side-slip it would stand very little chance of being injured by the fall, much less than if it were fastened to the carrier. It is also out of the way in the case of a hasty dismount.

There is also the great question of packing, which is again a waste of valuable time on the return journey, especially when in the dark with cold and often frozen fingers.

I hope my endeavour to interest some of my sporting readers who do not yet possess a motor cycle will not have been in vain, and that if they possess any shooting friends will influence them to consider my advocacy of the motor cycle. I think all will agree that the arguments in favour of its use in pursuits of this nature are irrefutable.

In conclusion, I would add that if the motor cyclist sportsman is fortunate enough to possess a sidecar attachment to carry his friend and a dog the acme of pleasure is reached. T.H.S.

ENTRIES FOR SATURDAY'S BROOKLANDS MEETING.

Entries for the opening meeting for 1911 of the Brooklands Automobile Racing Club, to be held on Saturday next, the 25th inst., are as under :

2.25 P.M.—THE THIRD 70 M.P.H. HANDICAP.

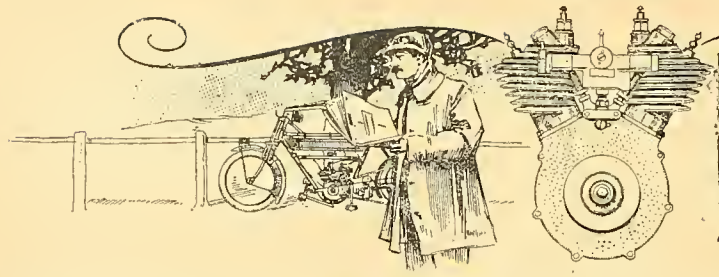
Name, cylinders, and machine.	Bore.	Stroke.	c.c.
N. Stewart (1-cylinder Trump-Jap) ...	85	85	432
C. Maitland (1 Trump-Jap) ...	85½	85	488
S. Burney (1 Rudge-Whitworth) ...	85	88	499
J. Surridge (1 Rudge-Whitworth) ...	85	88	499
H. Arnott (2 V.S.)	75	75	662
C. Godfrey (2 Indian)	82½	93	994
D. Shaw (2 Indian)	82½	93	994
J. Moorhouse (2 Indian)	70	82½	635
R. Taylor (2 J.A.P.)	85½	85	976
M. Simpson (1 Triumph)	85	88	499
Mariani (2 Matchless-Jap)	76	85	770
R. Collier (2 Matchless-Jap)	85½	85	976
V. Colver (2 Matchless-Jap)	85½	85	976
S. Powell (2 N.S.U.)	80	99	996
A. Collier (2 Matchless-Jap)	76	64	580

4.20 P.M.—THE FIRST 65 M.P.H. HANDICAP.

Shanks, jun. (1 Kingfisher)	85	60	340
N. Stewart (1 Trump-Jap)	85	85	482
C. Maitland (1 Trump-Jap)	85½	85	488
Wadham (1 Zenith-Gradua)	85	85	482
D. Harrison (2 Moto-Rêve)	50	85	334

Name, cylinders, and machine.	Bore.	Stroke.	c.c.
Dr. Hugh Gaskell (1-cylinder Triumph) ...	85	88	499
F. H. Arnott (2 V.S.)	75	75	662
F. C. White (1 J.A.P. A1)	75	75	331
C. S. Burney (1 Rudge-Whitworth)	85	88	499
V. J. Surridge (1 Rudge-Whitworth) ...	85	88	499
O. C. Godfrey (1 Indian)	82½	93	497
D. C. Bolton (1 Triumph)	85	88	499
A. J. Moorhouse (2 Indian)	70	82½	635
C. M. Simpson (1 Triumph)	85	88	499
G. V. Fowler (1 Triumph)	84	86	477
H. P. Storey (1 Caeco)	81	67	345
A. Mariani (2 Matchless-Jap)	76	85	770
F. E. Barker (1 Dart-Buchet)	76	73	331
F. A. McNab (1 Trump-Jap)	85½	85	488
A. Baker White (1 Trump-Jap)	85½	85	488
H. S. Powell (2 N.S.U.)	52	74	314
F. W. Barnes (1 Zenith-Gradua)	85½	85	488
P. Weatherilt (1 Zenith-Gradua)	85½	85	488
G. W. L. Meredith (1 Triumph)	85	88	499
E. B. Ware (1 Norton)	79	100	490
J. C. J. Ferte (1 Zenith-Gradua)	85½	85	488
R. T. Exshaw (1 J.A.P.)	85	85	482
W. D. Johnstone (2 Matchless-Jap) ...	65	85	564

Besides the two motor cycle races, there are six events for cars and a flying competition. The first race is at 2.0 p.m.



PREPARING FOR THE ROAD

Notes on Equipping THE NEW MOUNT.

THIS issue of *The Motor Cycle* marks the real commencement of the touring season, and coincides with the period at which the recruits who have during the past winter decided to join our ranks are put through their drills. Therefore a few words as to preparation for the road and equipment of the new mount may not come amiss. Some argue that, like American motor cars, modern motor cycles should be sold all ready with a complete equipment necessary for touring; and although this arrangement appears to have much in its favour, yet there is a certain charm in choosing one's accessories, and in thus putting the stamp of one's own individual taste upon a machine that but for this could scarcely be distinguished from a thousand others of the same make.

The Machine.

The shrewd manufacturer sends his "book of the words" or instruction manual a week ahead of the machine. At about this time the pleasures of anticipation become literally indescribable, and nothing calls them into being with better effect than the instruction book. The first thing, then, is to get this off by heart, or, at all events, the principal points; and until one gets used to the hang of things, obey its autocratic commands to the letter. When the machine arrives *in*

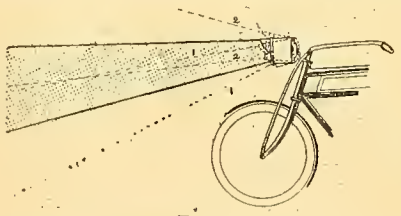


FIG. 1.

propria persona, an examination of it in company with the booklet is most advisable, especially if the latter is explicit in reference to the adjustment of certain parts. Motor cycles *have* been known to be sent out with parts missing, and to those who are not already familiar with their most intimate anatomy, the instruction book is generally the most dependable means of checking this. The better the book the better the machine (as a rule), for care in its compilation indicates a desire on the part of the maker to keep his customer on the road. A sound manufacturer will always frown when a machine comes back to the works, even though it helps to pay the way of the repair department.

Having got going, take things easy for the first fifty miles or so, twiddle with the air, spark, and throttle levers, until their control becomes more or less instinctive, and aim to get the best speed and best running at all times with the throttle as little open as possible. Not only does this course mean low petrol consumption, but it leads also to a cool engine and a long life, which are even more important. After the first ride, go over every nut and screw of any importance with a spanner and screwdriver, and make all tight.

How to Preserve Bright Parts.

Motor cyclists may be roughly divided into two great classes—those who have leisure, and those who haven't. To the former, the best advice one can give is, "Clean the machine after every ride," and there is scarcely any doubt but that this course is the better in the long run. But to those who haven't the time to spare in cleaning, the best advice is, simply, "Don't clean the machine at all, unless it becomes too filthy for words." As the writer belongs to the second class, and, in fact, has always done so, he can testify to the expediency and effectiveness of the no-cleaning treatment.

Directly the new machine arrives, out comes a pot containing a mixture of vaseline and petrol, which is painted pretty lavishly all over hubs, spokes, rims, and all nickel parts, except those on the engine and the handle-bars. Especially liberal should be the smearing round parts such as the road wheel ball bearings, where mud is likely to be thrown. It is true that the vaseline varnish soon takes unto itself a goodly admixture of mud and dust, but it is none the worse for that, and, however unsightly it may be, there is always the huge advantage that, when it is cleaned off (as it should be for special occasions), the plating underneath comes up as bright and as smart as when it left the polishing bob.

It is not convenient to grease the handle-bars because that invariably spells ruin to gloves, etc., but they can be protected in a most elegant way with a coating of celluloid varnish. This can either be bought or home-made, and if the motor cyclist chances to be also a photographer this will provide a chance of using up old Kodak films, or any scrap "clean" celluloid. This is cut into small pieces and dissolved in either amyl acetate or acetone. The varnish so made should be about the consistency of ordinary varnish. Using a soft camel-hair brush paint the handle-bars as evenly and smoothly and as quickly as possible. Before drying the coating will be milky, but this disappears when it is thoroughly dry. The result is excellent in every way, as the surface is perfectly weather-proof, hard, and capable of being cleaned. It detracts in no way from the appearance of the plating—if anything, it enhances it.

Nickel-plated accessories are all the better for being coated with it (it can be wiped completely off when desired with a clean rag dipped in acetone), and the only reason it is not so suitable for the hub and rims, etc., is that when it is cleane of mud, etc., the grit cuts through it an tends to "flake" it off. Before applyin it to anything the object must be pe fectly clean, dry, and free from grea especially.

Number Plates.

As nothing is so easy as forgetting register the new machine until it arriv (in this case send a reply-paid wire to t clerk to the council of a "friendly county), number plates are not infi quently rather badly haste-marked, a rarely a credit to the artist who impr sionised them at the last minute wh they were practically ready for the ro As a matter of fact, painting really respe able numbers is by no means easy, a to those who do not care about riding machine disfigured in this way I commend transfers of the numbers a letters. They only cost a few pence, a should be varnished over after be affixed. Most makers will fit these tra fers if asked to do so before the mach leaves their hands.

Lamps and Generators.

No accessory should be chosen w such care as the head lamp, for the dif ence between good and bad spells

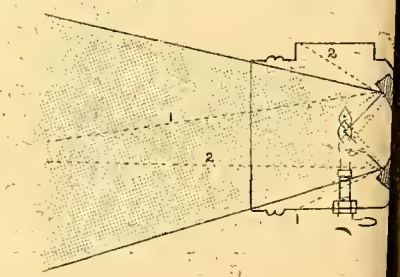


FIG. 2.

difference between safety and pos danger when riding at night. C lamps should therefore be avoided the plague, as they are the very v sort of economy. Far and away the type of lamp is one with a good mirror, and there are a variety of n of these covering both those whic designed to fix on to the ordinary bracket attached to the machine, also those which are carried in a c supported directly from the handl stem. The latter class has the a tage that with it the beam of light c directed exactly where it is req Unfortunately for the former, the bracket sent out with the machine infrequently untrue with regard t front forks, as well as being inclin the wrong angle. Thus, the bea light is cast to one side, and po

eparing for the Road.—

uch too far ahead, if not actually up the air as well. These brackets, how-er, are generally of softish metal, and n be persuaded into their proper posi-tion with a large spanner or some form of lever. This is not their only disadvantage, as when a cradled lamp is being fitted they often persist in getting badly in the way, in which case the best thing is to cut off the interfering part with a hacksaw. In fig. 1 are shown the

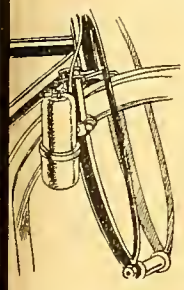


FIG. 3.

nt and wrong ways of arranging the d lamp, which is shown in its correct tion, *i.e.*, with the lens mirror verti-by solid lines. In this case it delivers beam of light straight ahead, marked with solid lines, the beams obtained using the wrong positions being ked respectively 11 and 22.

Burners.

the burners which are used in head os, the "double impinging" type in h two separate jets are employed ld be avoided as far as possible in ur of the more expensive "fish-tail" er, which also has two jets, but in case they are covered by a baffle h prevents one of them cracking the mirror if the other should become entally stopped up.

re should be taken to see that the lene flame is slightly above the centre he lens mirror rather than below If the flame be low down the beam be properly directed when the flame ll on, but if not full on the light be thrown upwards, where it is of se.

the other hand, with the flame ly above the centre, a moderate will still light the road up well . whilst if the flame be increased will not deflect the main beam in ndesirable manner, but will simply the point of greatest illumination

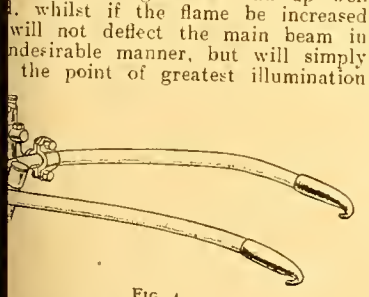


FIG. 4.

a little closer to the machine. This is illustrated in fig. 2, the beam red by the low flame is represented 2, and by the high flame as 11. atter, it will be seen, is much more than the former. In adjusting the one should aim to get the best light distance of not more than thirty The upper rays will then light up t objects sufficiently well to show hey are objects, but the greatest eeing at thirty yards distance will one to see what the objects exactly nd give plenty of time to pull up or clear.

The effectiveness of the light is very largely dependent upon correct focussing, and experiments should therefore be made to find how the best effect is gained.

The best position for the generator is not necessarily the handiest. When affixed to the handle-bar it is certainly in a position that makes it easily regulated and filled, but it is as well, if possible, to have it in such a position that the indiarubber tube goes uphill from the generator to the burner.

When the acetylene gas is formed it is by no means dry, and although its moisture is largely taken out by the filter pads with which most generators are provided, nevertheless if moisture condenses in the tube it is better that it should run back to the generator rather than into the burner. The shorter the rubber tube is the better, and it should be good stiff stuff so as not to sag down close against the generator nipple.

There is, too, another advantage in using stoutish tube, as all lamps are not made to take the inflator tubing direct, and if the gas tube is strong it enables a tyre pump to be used to force out any particles of dirt that may have settled in the jet.

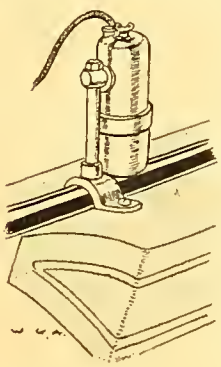


FIG. 5.

Figs. 3, 4, and 5 illustrate three places for the attachment of the generator. That on the forks is perhaps the best, as the carbide gets the most shaking in this position, and by having the lime continually removed as soon as it is formed, an even generation of gas is produced.

Horns and their Attachments.

This is another case in which a small extra outlay in the beginning pays for itself over and over again afterwards. There are several types of road clearers on the market, but it is doubtful if there is anything more effective than a good deep-toned bulb horn. Deep tone, however, is a necessity, for "squeakers" are so largely affected by push cyclists that few people take much more than passing notice of them.

In fitting the horn, as well as anything else that is supported by the handle-bar, it is a good plan to insert a leather washer between the clip and the handle-bar, and this can be simply an inch or two cut off a strap fixed as shown in fig. 6. The washer ensures the horn or other accessory remaining *in situ* and not slipping down with vibration, at the same time scratches on the handle-bar are avoided, and the possibility of rattle from this source entirely eliminated. The horn should be set up so that the bulb is in the handiest possible position. It is, for acoustic purposes, best to have the trumpet mouth pointing dead ahead, but trouble is frequently met with in this case by particles of dust and small flies (the latter are especially annoying, as they are so sticky) getting drawn into the reed and spoiling the note. A gauze cover over the mouth is, therefore, a great advantage, but if an open horn be used the trouble can largely be avoided by aiming it to one side, its efficiency being not very much affected by so doing.

How to fix a Speedometer.

To know the rate of one's speed is so essential in touring through hostile districts, and at all times so interesting,

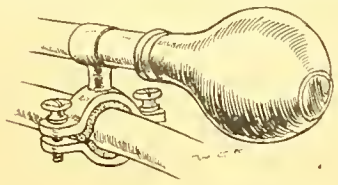


FIG. 6.

that a speedometer is almost a necessity on every machine, and as it is one of those accessories which can be retained when the machine is eventually sold (it is rather too heavy a makeweight to throw into the bargain) its cost is relatively small, as its value is spread over so long a period. A great many motor cyclists pay extra for the fitting of a speedometer, but this is really quite unnecessary, as anybody who can use a screwdriver can do the job.

The driving pinion is very easily centred upon the wheel. The latter must be entirely removed from the frame and the pinion bolted to the spokes as near centrally as the eye can show, but with only three or four bolts, and then should not be screwed up tightly, but only sufficiently to hold it in position. Then hold the wheel up between the hands which grasp the axle ends and spin it at a moderate speed. By then eyeing the pinion "edge on" its eccentricity, if any, can readily be observed and corrected by lightly tapping it over with a hammer. When centred all the fixing bolts should be put in and finally tightened up so as to make all fast.

The driving pinion should not have its teeth too deep into the driven pinion, as both are likely to get dirty, and if there is no clearance allowed for the dirt a great deal of wear will take place, to say nothing of straining the bearings of the small pinion. The universally jointed shaft should be kept as straight as possible, and it is important to see that when the front wheel is turned no strain is thrown upon the sheath.

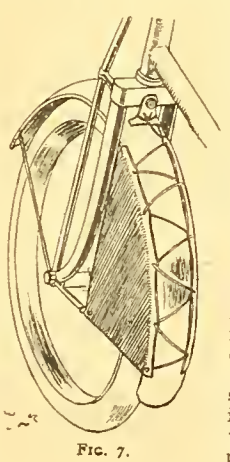


FIG. 7.

Spare Tanks

Even with the most careful and foresighted motor cyclist there are times when a spare petrol tank is worth its weight in a more precious metal

Preparing for the Road.—
than it is built of, especially to those who go far afield on Sundays and find that petrol is difficult to obtain. These tanks are marketed in all sorts of convenient forms, and are really well worth their room even if only called into requisition once in a

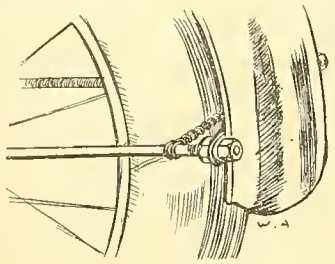


FIG. 8.

twelvemonth. Make a point of filling the spare tank first and the main one afterwards if it has been necessary to use any out of the former, otherwise it is liable to be found empty when most required. A spare half-pound tin of carbide should likewise be carried, and to avoid rattling should have the carbide packed tight with a piece of rag. Those motor cyclists whose engines thrive best on one particular kind of oil are also advised to carry a spare tin of this commodity. A well-cleaned carbide tin acts very well in this capacity, and a half-pound size will hold enough oil for thirty or forty miles at least.

The Attachment of Extra Mudguards.

As quarterly trials and other competitions prove beyond doubt, motor cycles can still be improved as far as weather-proofing is concerned, and it is really wonderful what a difference in the appearance of a machine can often be made by the addition of a few square inches of extra mudguard. The positions for this can best be found out by experience after a few mudplugging rides, but the belt pulley on belt-driven machines and the chain on chain-driven machines should especially be guarded.

The best material to use for these mudguards is patent leather, but this is rather expensive. On the other hand, it is practically everlasting, and holes made in it will not tear. The next best thing is a material called "Hessian," which looks like patent leather, but consists of glazed fabric. This is quite cheap and easily obtained through a saddler. It cleans up beautifully, and however dirty may be made to exhibit all its pristine splendour with the aid of a damp rag. As this stuff is likely to tear unless treated with consideration, it is best to punch the necessary holes in it rather than drill or pierce them, and if access can be had to a saddler with an "eyeletting" punch so much the better. Leather bootlaces are excellent for fixing these mudguards, as they allow them easily to be removed when necessary, and the laces do not look so "scrappy" as copper wire.

One of the most usual places to demand the addition of extra mudguards is on the front wheel, as shown in fig. 7. This also shows the method of attaching them. The idea is to prevent the mud thrown into the fixed mudguard from being blown out of it and back on to the rider and the engine.

Thorn Catchers and Puncture Preventers.

Fig. 8 illustrates the simplest possible method of attaching puncture preventers, and most valuable little fittings they are, too, for if they do not actually obviate punctures altogether, they do, when properly fitted, lessen the likelihood of their occurring by snatching out thorns, etc., which get stuck in the tyre. They consist of a few strands of strong copper wire passed across the mudguard stays and fixed by twisting the ends of the wire round and round as shown. They may be applied to any of the mudguard stays, and should come within about $\frac{1}{8}$in. of the tread of the tyre. As the latter wears they can be shifted towards the tyre again.

Tool Kits and Bags.

The matter of tool kits and general outfit is largely one of personal taste, and it is therefore impossible to make more than a few rough suggestions, but it is at any rate certain that a full equipment in this regard is well worth the extra weight carried. The maker generally fits one toolbag, and some fit two, but it is a good plan to augment them with another, unless they are very capacious indeed. Similarly, the tool kits sent out with new machines can very well stand some additions, as they are rarely complete enough for touring work. The following list includes practically everything required, and involves nothing very expensive: Large size tyre repair outfit, two adjustable spanners (one large and one small),

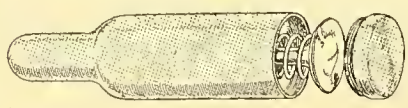


FIG. 9.

two fixed spanners to fit all the nuts on the cycle part of the machine, including ball bearing cones, etc., a pair of cutting pliers, a screwdriver with a wooden handle (this comes in very useful in shorting the plugs to test the cylinders of a twin engine), a contact breaker file, and a toolpad containing a variety of small tools. The spare parts should especially be complete, and should comprise valve complete with cotter, washer, and spring, carbureter jet, tyre valve, magneto contact breaker spring and high-tension collector, length of high-tension cable, two sparking plugs, acetylene burner and length of rubber tube, coil of copper wire, detachable inner tube, selection of nuts, washers, bolts, etc. In the case of a belt-driven machine it is advisable to carry a spare belt complete with fastener, but, at all events, a couple of spare fasteners. For a chain drive a few jointing links are essential. All the small spares should be packed in a tobacco tin and well padded with rag to prevent the rattling and smoothing the corne off one another. Especial care shou be taken of the spare valve prevent its head receiving knocks, and it cannot be accommodated in a wood case (fig. 9), should be very well wrapp up with rag. If a tool roll is not carri

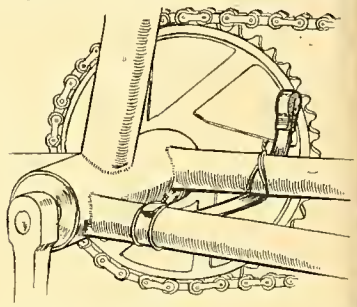


FIG. 10.

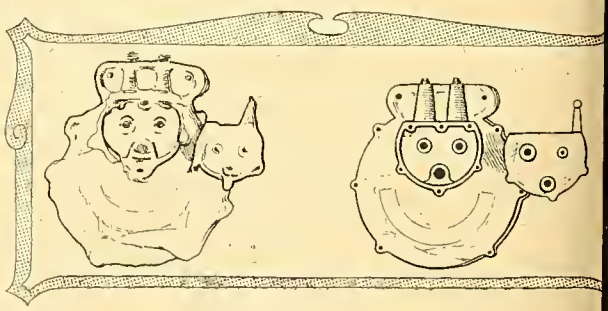
the tools should also be so wrapped, a if there is any space left in the toolb this also should be filled up with cl rags, which are always useful.

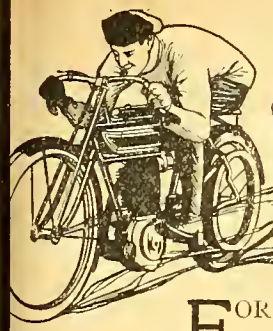
To Prevent Pedal Axles Revolving.

On many machines fitted with pedall gear the free-wheel, after a run on muc roads, shows a tendency to revolve pedals a little, and this is especia annoying, not to say dangerous, w using one of them for the run and ju on mount. In fig. 10 is sketched a li contrivance which most effectually vents this occurring, and at the s time does not in the least interfere the pedals being used when required. consists of a short piece of stiff c spring, capped at one end with a pa thick leather (a piece off a strap se excellently for this purpose) and attached to the chain stays that this bears against the side of the pedal c sprocket, as shown in the sketch. little contrivance works exceedingly and can be made by anyone. It occu practically no room whatever, is no the way, and is quite unnoticeable.

A USEFUL REFERENCE BOOK

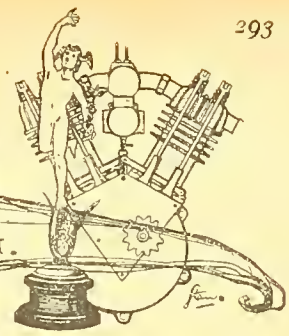
Many motor cyclists are also owners, and the latter will be intere to know that the very useful table of on the British market for 1911, publi in *The Autocar* of October 29th has been reprinted in book form. the features have been retained, such chassis and complete car prices, principal mechanical features and dimensions of each car. The price this useful book is 1s. 9d. post from *The Motor Cycle* offices, 20, T Street, E.C.





BROOKLANDS

B.M.C.R.C. FIRST 1911 MEETING.



FOR the first meeting of the year the British Motor Cycle Racing Club had by means an auspicious day. The wind was easterly, it ned off and on the whole afternoon, it was bitterly d, and in a word the weather conditions were just ut as unpleasant as they could be. The meeting, ever, was even more successful than the average I.C.R.C. function, and the attendance was more n ordinarily good.

echanical Features of Some of the Racers.

mong the interesting machines may be mentioned ler's Premier, with auxiliary exhaust release; les's Whitgift-Jap, with radiator fins, carburetter, every conceivable part of the engine and its sur-dings drilled; Surridge's and Burney's new Rudges; Trump team, with coil ignition and H.H. dry s; Martin's Martin-Zedel, with seat of iron, shaped a small horizontal cycle wheel, more light than fortable; Slaughter's L.M.C., fitted with a new ce consisting of an additional mechanically-operated e placed over the inlet dome and operated by head mechanism driven off the intermediate wheel he magneto gear. This valve was timed to work uch a manner as to induce the burnt gas remaining he cylinder by suction into the crank chamber, to h it was connected by means of a copper pipe. s clever device is the invention of Mr. Lloyd, the gner of the L.M.C. There was also Guiver's Kerry machine new to track racing—with an extension he air intake rearward of the carburetter: a prac- which seems about to become prevalent; and, y, we must not omit the new 2½ h.p. Motosacoche.

The All Comers' Penalty Handicap.

he first event was the All Comers' Penalty Handi- for motor cycles of any type fitted with any size ngine; distance, about eight miles (three laps). es: The club's gold, silver, and bronze medals first, second, and third respectively.

o decide the handicap, a trial run was made, start- punctually to time.

ost to be remembered of the trial run is Godfrey's derful speed on 994 c.c. twin Indian. Girt in red ner leggings (moccasins someone termed them), new Indian rider showed the others a clean pair eels, and led by half a mile the first lap, and finished by what appeared to be a clear mile. The order he first six was:

RST LAP.—Godfrey, Tessier, Stewart, Johnson, Maitland, Surridge.

COND LAP.—Godfrey, Tessier, McNab, Stewart, Guiver, Maitland.

IRD LAP.—Godfrey, Tessier, McNab, Stewart, Surridge, Miller, while the rest arrived in the following order: and, Burney, Meredith, Slaughter, Baker-White, yd, and Webster.

In the final the first lap order was:

Holroyd, Webster, Chitty, Slaughter, Maitland, Burney, Meredith, Baker-White, Surridge, Miller, Tessier, McNab, and Godfrey.

SECOND LAP.—Maitland, Baker-White, Surridge, Burney, Meredith, Tessier, Miller, Holroyd, Slaughter, Godfrey, McNab, and Chitty.

LAST LAP.—Surridge, Maitland, Baker-White, Burney, Tessier, Slaughter, Godfrey, Meredith, Miller, and Webster. The first four were disqualified for exceeding by more than five seconds per lap their times in the trial run. The results were:

Rider, cylinder and machine.	Bore and stroke.	c.c.	H'cap. M. S.
1. S. T. Tessier (2 Bat-Jap) ..	76 × 64	480	1 45
2. J. Slaughter (1 L.M.C.)	85 × 88	499	2 51
3. O. C. Godfrey (2 Indian) ...	82.5 × 93	994	scratch
The following also ran:			
V. J. Surridge (1 Rudge) ...	85 × 88	499	2 20
A. C. Maitland (1 Trump-Jap)	85.5 × 85	488	2 35
A. Baker-White (1 Trump-Jap)	85.5 × 88	488	2 55
C. S. Burney (1 Rudge)	85 × 88	499	2 45
V. L. Meredith (1 Triumph) ...	85 × 88	499	2 48
A. G. Miller (1 Premier) ...	85 × 88	499	2 33
A. Webster (1 Hobart)	70 × 78	300	6 19
F. A. McNab (1 Trump-Jap) ...	85.5 × 85	488	1 49
R. N. Stewart (1 Trump-Jap) ...	85 × 85	482	2 15
W. Chitty (1 Frays-Jap) ...	85 × 85	485	4 3
J. S. Holroyd (1 Motosacoche) ...	54 × 75	247	6 4

Winner's speed 51.49 miles an hour.

The Junior T.T. Race.

The next race—the First Junior One Hour Tourist Trophy Race—gave people the first opportunity of judging what the baby Tourist Trophy machines could do on the track. Mr. A. J. Wilson, the donor of the

O. C. Godfrey with a 7 h.p. twin Indian on which he made his initial appearance on the track last Saturday. He gained third place in the first race.

Brooklands B.M.C.R.C. First 1911 Meeting.—

first prize—a silver cup—was an interested spectator. The second prize was the club's gold medal, and the third the club's silver medal. Several interesting newcomers took part in this event. Patteson rode a 2¾ h.p. M.R. with mechanically-operated inlet valves worked on the overhead system, and operated by a double cam on the same shaft situated between the two cylinders on which the exhaust valve cams are fitted. Barnes rode a new Zenith-Gradua lightweight, with Gradua gear. The engine (a J.A.P.) had overhead valves. This machine was unfortunately practically untested, and though it showed promise it might have done better had it had a few preliminary runs. It had an air intake extension to the rear of the carburetter. Woodhouse's New Hudson had the cylinder specially clamped down on to the crank case, and auxiliary exhaust ports.

The nine starters got away in good form, b Hodgetts found that being pushed off while in t saddle did not work, and, finally, he had to dismou and run alongside his machine.

THE FIRST LAP order was Colver, Martin, Powell, Barn Patteson, Woodhouse, Webster, and Holroyd.

SECOND LAP.—Martin, Colver, Barnes, and Patteson.

THIRD LAP.—Martin kept his lead.

FOURTH LAP.—Martin still led but lost time.

FIFTH TO NINTH LAPS.—Colver, Barnes, and Mart Barnes had to stop in ninth lap owing to a broken oil pi

TENTH LAP.—Colver, Martin, and Patteson, Colver ga ing ground steadily.

TWELFTH LAP.—Martin suffered from belt slip, Patte second and Barnes third.

THIRTEENTH LAP.—Barnes had a bad bout of misfiring Colver was shortly after almost a lap ahead, and the after Colver, Martin and Patteson did not change places

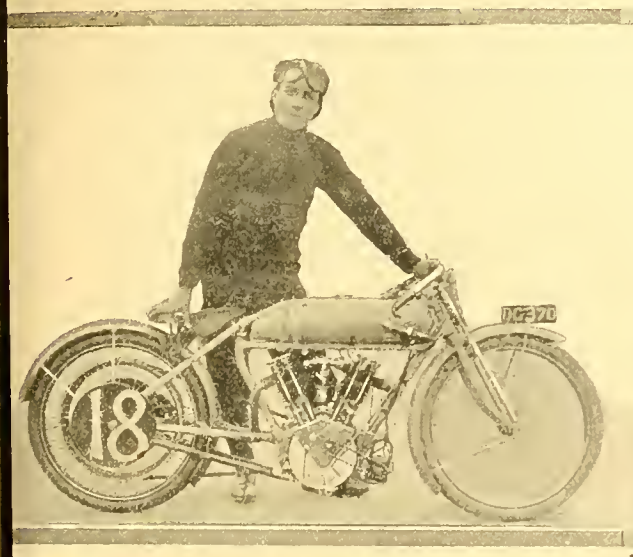
SCENES AT THE B.M.C.R.C. FIRST MONTHLY MEETING OF 1911.

GOING. General view the fork, mar ling the com tors for the Comers' Han

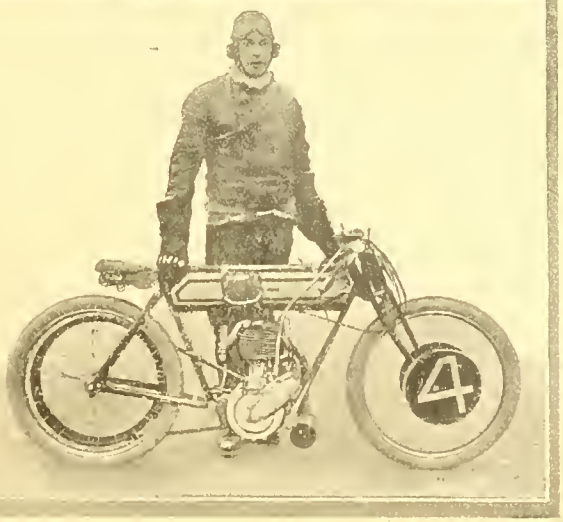
GOING. A snapshot at the moment of the starter's signal to go.

GONE A good st the Senior Race. Col front) mad best start a for 17 l

klands B.M.C.R.C. First 1911 Meeting.—



T. Tessier, the star performer at Brooklands last Saturday, gaining two firsts on his twin Bat-Jap.



V. J. Surridge, who signalised the Rudge's first appearance in a track race by heading the list of single-cylinder riders.

Rider, cylinders, and machine.	Bore and stroke.	c.c.	Distance in one hour. Miles Yards
. V. Colver (1 Matchless-Jap)	76 × 64	290	48 1,568
. Martin (1 Martin-Jap) ...	76 × 65	295	46 1,336
. Patteson (2 M.R.)	52 × 80	340	39 1,143
e following also ran:			
Webster (1 Hobart) ...	70 × 78	300	
S. Holroyd (1 Motosacoche)	64 × 75	241	
. S. Powell (2 N.S.U.) ...	52 × 74	314	
. Hodgetts (2 M.R.)	52 × 80	340	
W. Woodhouse (New Hudson-Jap)	70 × 76	292	
W. Barnes (1 Zenith-Gradua-Jap)	76 × 65.5	299	

The Senior T.T. Race.

in the Junior so in the Senior T.T.: the sole tion governing the race was the engine size. All a splendid start. C. R. Collier established a from the first, while Tessier, Stewart, McNab. ell, Godfrey, and Surridge followed.

fortunately, owing to an error on the part of the l in charge of the lap scorers, more than half of were missing at the start, rendering the race nely difficult to follow. Collier kept the first till the seventeenth lap, and then tyre trouble l him to relinquish his lead in favour of Tessier. b kept well to the fore, but in the last few ds of the hour his engine seized. Harrison Watson l early in the race, as the compression tap boss out. Collier had indeed hard luck, as he at one led by a lap. Slaughter had to retire through ngthening of his valve stem. Results:

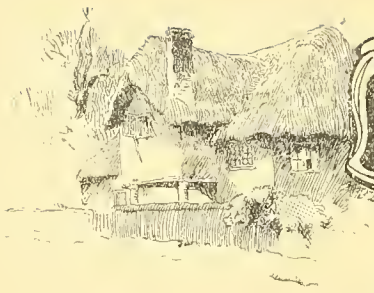
er, machine, and cylinders.	Bore and stroke.	c.c.	Distance in one hour. Mls Yds
T. Tessier (2 Bat-Jap) ...	76 × 64	580	55 874
J. Surridge (1 Rudge)	85 × 88	499	55 496
R. Haswell (1 Triumph) ...	85 × 88	499	54 587
e following also ran:			
S. Burney (1 Rudge) ...	85 × 88	499	
A. McNab (1 Trump-Jap) ...	85.5 × 85	488	
B. White (1 Trump-Jap) ...	85.5 × 85	488	
Slaughter (1 L.M.C.) ...	85 × 88	499	
B. Ware (1 Norton) ...	75 × 100	490	
C. Maitland (1 Trump) ...	85.5 × 85	488	
A. G. Miller (1 Premier) ..	85 × 88	499	
O. C. Godfrey (1 Indian) ...	82.5 × 93	497	
R. N. Stewart (1 Trump-Jap)...	85 × 85	482	
V. L. Meredith (1 Triumph) ...	85 × 88	499	
J. Woodhouse (1 Precision) ...	85 × 88	499	
J. Harrison Watson (1 Triumph)	85 × 88	499	
C. R. Collier (2 Matchless-Jap)	76 × 64	580	
J. Gibson (1 Trump-Jap) ...	85 × 88	499	

The timekeepers were Messrs. A. V. Ebblewhite, A. G. Reynolds, and T. D. Dutton; hon. secretary, Mr. T. W. Loughborough; judge, Major F. Lindsay Lloyd.

H. V. Colver (290 c.c. Matchless-Jap), winner of the first Junior One Hour T.T. Race.

THE B.M.C.R.C. BOOKLET.

We are in receipt of a booklet issued by the B.M.C.R.C. hon. sec., Mr. T. W. Loughborough, Highcliffe, Shooters Hill, Kent. It gives full particulars of membership and a membership application form. Those intending to join the club should write for one to the secretary.



CLUB NEWS

Herts County A.C. (M.C. Section).

For the members' hill climb on April 1st there will be two divisions to give all an equal chance. Division I. is open to all members who desire to compete in the hill climb. Division II. is open only to members who have never won a prize in a hill climb.

Gloucester City C. and M.C.

A meeting will be held at headquarters, Park End Hotel, on Wednesday, the 29th inst., at 8.30 p.m.

Liverpool A.C.C.

The run to Llangollen on the 19th proved successful, and was attended by a number of members. A meeting will be held at the Bee Hotel on the 27th inst., and all motor cyclists interested are cordially invited.

Cornwall M.C.C.

The opening run is fixed for Easter Monday, starting from headquarters, Red Lion, Truro, at 10 a.m. for Bodmin, St. Columb, Newquay, and Perranporth. At the last-named place it is proposed to have an informal hill-climbing contest, starting at 2.30 p.m.

Northern League of Motor Cyclists.

The adjourned general meeting will be held at the Grand Central Hotel, Briggate, Leeds, on Saturday next, the 25th inst., at 7 p.m. The arrangements for the meets at Richmond on Good Friday and Scarborough on Easter Monday are now practically complete, the Staxton hill-climbing contest being left in the hands of the Scarborough and District M.C. to organise.

Dublin and District M.C.C.

The above club opened its season on the national holiday, Friday last, with a run to Glendalough, and on the way a hill-climbing competition was held at Balinaslaughter Hill. The result was decided on formula. A. Carville on one of the new Rudge-Whitworth machines, made the fastest time, beating J. Healy, on a T.T. Triumph, by two-fifths of a second, but the latter secured the placings on the formula, his weight putting him in first position. The result was as follows:

1. J. Healy (3½ T.T. Triumph) ... ... 2m. 49⅘s.
2. A. Carville (3½ Rudge-Whitworth)... 2m. 49⅗s.
3. F. J. Walker (3½ Rudge-Whitworth) 2m. 56⅗s.

York City and District M.C.

A movement is on foot to form a motor and motor cyc club for York and district. Will those interested commun cate with Mr. S. H. Clay, 17, Little Stonegate, York?

North Middlesex M.C.C.

The opening run will take place on the 26th ins from headquarters, at 10 for 10.30 a.m. Lunch will arranged at Bedford for 1.30 p.m. It is hoped that members will endeavour to turn out.

Sutton Coldfield A.C.

The club's opening run has been fixed for Saturda April 1st, when there will be a speed judging competiti open to both cars and cycles. In this competition mar will be awarded to members to count for the Muratti-Aust trophy, awarded for the best performance throughout t year's competitions.

North-west London M.C.C.

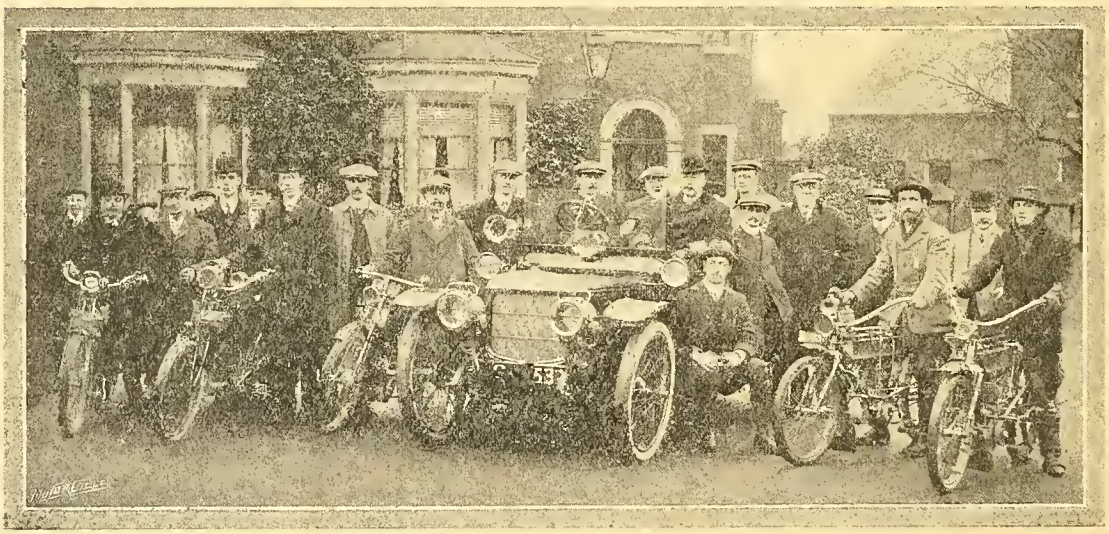
The paperchase to be held next Saturday, the 25th ins starts from the Grape Vine Inn, Stanmore Hill, at 3. p.m., and it is hoped that a large number of members w be present. To encourage the use of cameras in club ever a prize will be given for the best photograph of a club eve held during the year.

West of Scotland M.C.C.

The A.G.M. was held on the 17th inst. Mr. Stanley Miller admirably presided over an enthusiastic meeti Fourteen new members have been elected. The financ statement showed a good balance, but the subscription v raised to 3s. 6d. to provide for forthcoming expenditure, entrance fee remaining at 2s. 6d. The officials are: Pr dent, Mr. Alexander Craig; captain, Mr. Stanley Miller; hon. secretary, Mr. J. K. Lamont; committ Messrs. R. W. C. Steven, A. D. S. Barr, John Kirsop, a Frank Salvesen.

Willesden Green C. and M.C.C.

A club supper, followed by a concert, will be held at Norfolk Arms, Wembley, on Thursday, the 30th inst., co mencing at eight o'clock. The committee have also arran the following events: A 100 miles reliability trial, a re bility trial to Coventry and back, a speed-judging cont and a petrol consumption trial. The Kempshall Tyre have kindly offered a non-skid tyre and an anti-skid tyre prizes in the Coventry and back trial, which takes place July 16th. J. C. Ball, hon. sec., 166, Chapter Road, Wil den Green, will be pleased to hear from prospective memb



A meeting week of Scarborough District Mo Club, which ganisation boasts an up date club h with billia room.

ub News.—

Cork and District M.C.C.

The winner of the above club trial from Cork to Killarney d back on the 17th inst was F. L. Dooly (5 h.p. V.S.)

Hampshire Motor Cycle Union.

The above union has been formed by the amalgamation of e Southampton, Fleet, and Winchester Clubs comprising e hundred members. The subscription is 6s., and the ening meet is on Good Friday to Bishops Waltham.

Carlyle C.C. (Motor Cycle Section).

It has been decided to form a motor cycle section of the ove London club, and members will be affiliated to the C.U. Further particulars can be obtained from the hon. ., Mr. C. W. H. Clark, 69, Comyn Road, New Wandsorth, S.W.

Streatham and District M.C.C.

The lecture ("The Whys and the Wherefores of Electcity") by Mr. A. E. Bennett was much enjoyed on Friday ening last. The lecturer showed that it is as economical to e electricity as acetylene for motor cycle lamps, and incintally displayed a new acetylene generator that he has tented. A speed judging trial will take place on April 8th.

Cambridge University M.C.C.

The results on formula of the hill climb of which we gave rticulars in the issue of the 16th have now been nounced as follow:

Lightweight Class.—1, A. Drysdale (2¾ h.p. J.A.P.); 2, G. S. Miller (2¾ h.p. Douglas).

3½ h.p. Class.—1, N. Gray (T.T. Triumph); 2, G. A. eppard (T.T. Roadster Triumph); 3, J. P. Wills (3½ h.p. nith-Gradua).

"Up to 650" Class.—1, N. Gray (T.T. Triumph); 2, M. Harris (3½ h.p. Triumph); 3, P. H. Dodgson (3½ h.p. iumph).

Open Class.—1, N. Gray (T.T. Triumph); 2, J. P. Wills h.p. Zenith-Gradua); 3, M. G. Harris (3½ h.p. Triumph).

Walsall M.C.C.

At a packed meeting held on the 14th inst. the formation of a motor cycle club was unanimously agreed upon, to be called the Walsall M.C.C. The following officers were elected: Captain, H. U. Smytheman; hon. treasurer, N. Hall; hon. sec., F. Hough, Electric Picture Palace, the Square, Walsall, who will be pleased to send full particulars to all intending members.

Walthamstow M.C.

The club supper which was followed by a concert at headquarters, The Rose and Crown, Walthamstow, was well attended on the 16th inst. The club's opening run will take place from headquarters, on April 1st, at 3.30 p.m., and on Sunday, the 2nd, there will be a run to Cambridge to which all motorists will be welcomed. Particulars of membership, etc., may be obtained from the hon. secretary, J. W. Percival, 13, Church Hill, Walthamstow.

Herts County A.C. (Motor Cycle Section).

The opening run on Saturday took the form of a fifty-three miles non-stop run. The roads in many places were of the worst description, but twenty-seven riders took part, and the route was well marked throughout. Just out of Rickmansworth is Batchworth Hill, which has two severe bends. The surface of the hill was in fair condition. Marians was the best of the P. and M. batch, taking the hill splendidly on top gear. Beard, on the Wanderer, came up to the second bend in great style, but got in a rut and in trying to recover stopped. O'Donovan, on the Singer, also stopped. Very bad time was made by the majority of the competitors. This was no doubt due to the prevailing climatic conditions, but it is rather remarkable that out of fourteen non-stops only six managed to run to schedule and qualify for awards. The six riders who fulfilled the conditions are: W. Cooper (3½ h.p. Bradbury), J. Watson, P. H. Batchelor, E. C. Jarvis, L. S. Dunn, and H. Dunn (all on 3½ h.p. Triumphs).

THE PROPOSED CLUB HOUSE.

A MEETING to discuss this matter was held at the Holborn Restaurant on Wednesday last week, when probably two hundred or more responded to the invitation. Mr. S. F. Edge presided, and mentioned at a provisional committee had formulated a scheme, the ine of which he would ask Mr. Cove to read. The posed organisation would not come into opposition with existing one, and would be non-political.

Mr. Cove stated that the objects of the club house would to provide opportunities for social intercourse among tor cyclists and others interested in the sport and pastime. itable premises had been found in Great Portland Street, ose in view consisted of four floors, containing well lighted. y rooms, suitable for reading, writing, and lectures, a iard room, dining room, committee room, and card room, ides accommodation for a housekeeper. There is ample age accommodation within 200 yards of the house. This uld be free to members. It was not proposed to find bedms at the club, but hotels abounded in the immediate inity. The upkeep, including rent £180, rates and taxes 0, electricity and gas, coal, wages, etc., was estimated to about £800 for the first year. The revenue would be ived from subscriptions of members.

To meet the initial outlay on furniture, it was proposed elect, say, fifty life members on payment of a subscripn of £10 10s. each. There would also be founders' shares £5 5s. each (say 100). Town members would pay £2 a year subscription, and country members 10s. 6d. a r.

t the conclusion of Mr. Cove's speech, the Chairman ited questions and criticisms of the proposed scheme, r which he said he would submit a resolution.

n answer to questions, the Chairman made one or two nts clearer, and supplied a few additional particulars as ows: The founders' shares would not be limited to one dred. If more members wished to join in that way, they ld be taken gladly, each with his five guineas subscrip. Suitable premises in the neighbourhood of Piccadilly, h as that neighbourhood might be desired, could not be ained except at a prohibitive rent. The minimum number members taking up founders' shares upon which the club would proceed to work should, he thought, be not less than fifty, to seventy-five, together with one hundred ordinary members. A founder's liability would be limited to the amount of his subscription. Country members would be those living beyond a radius of twenty-five miles from Charing Cross.

Mr. Cove supplemented the chairman's replies. He thought a steward and his wife to live on the premises and receive their board could be got for £1 a week wages. A waiter at £1 a week and a boy at 10s. a week would be a sufficient staff to start with. Additional waiters could be temporarily engaged as required. The club would be registered as a limited liability company by the founders through their committee, and would appoint their own secretary.

A general discussion on the scheme followed, most of those who spoke being in favour of it.

The Chairman then proposed the following resolution: "In the opinion of this meeting the time has arrived to form a clubhouse in London for motor cyclists."

Mr. Hooydonk, who seconded the resolution, and had previously been inclined to criticise it, explained his conversion by pointing out that the resolution was in such general terms that it hardly justified one in speaking on the particular scheme that had been placed before the meeting.

The Chairman explained that it was necessary to put the motion in general terms, so as to get, first of all, the sense of the meeting on the simple question that had brought them together.

The Chairman then put his own resolution, which was carried with an almost unanimous show of hands.

Forms had been distributed asking for support. These had now been handed in, and the Chairman read out the result as follows

5	country members at	10s. 6d.	subscription.
12	life ,, ,,	£10 10s. 0d.	,,
16	town ,, ,,	£2 2s. 0d.	,,
28	founder ,, ,,	£5 5s. 0d.	,,

and 36 promises to consider the matter.

With a hearty vote of thanks to the committee for their labours, and to Mr. S. F. Edge for his kind conduct in the chair, the meeting then terminated

CURRENT GEAR

Time to light Lamps
(Greenwich)

Mar. 23rd	...	7.16 p.m.
,, 25th	...	7.19 p.m.
,, 27th	...	7.23 p.m.
,, 29th	...	7.26 p.m.

Special Features

EIGHTH ANNUAL SPRING NUMBER.

The Lady Motor Cyclist.
Ten Years' Progress.
Preparing for the Road.
Wild-fowling. Etc., etc.

The North v. South Hill-climb.

For the inter-club open hill-climb near Harrogate on Easter Saturday, April 15th, North *v.* South, Messrs. Phelon and Moore have kindly presented a trophy to the Herts County A.C. to be awarded in this event.

Contemplated Sidecar Record.

Mr. Hugh Gibson, holder of the End-to-end sidecar record, informs us that he is contemplating setting up a new sidecar record, details of which we shall announce later. At present we can only say that it is of a more strenuous nature than the existing record, although the average legal limit will not be exceeded.

Practising in the Isle of Man.

The paragraph in our last issue mentioning that two motor cyclists had been seen practising on the Snaefell course has led to Mr. F. Straight, the A.C.U. secretary, notifying the riders concerned that under the regulations (which are expected to be ready this week) practising will only be allowed from Thursday, 22nd June.

First Open Hill-climb of 1911.

Entries at ordinary fees for the Oxford M.C.C. open hill-climb, to be held on April 8th, close on Saturday next, the 25th inst. The venue of the competition is to be kept secret, but a hill midway between Oxford and London has been selected. The competition starts at 1 p.m. Entry forms may be obtained from Mr. H. G. Hill, trials hon. sec., 11, Market Place, Banbury.

Clubhouse for Lincoln.

In connection with the scheme for a good-class cyclists' clubhouse at Lincoln it is quite likely that the motor cyclists will arrange to participate. Very suitable premises have been secured, and in a few days the prospectuses will be issued. Mr. G. J. Wilkinson, ex hon. sec. of the Lincolnshire Motor Cycle Club, is acting in the matter for the motor cyclists.

Organised Parties for the T.T. Races.

Mr. E. G. Young, Trent Bridge, Nottingham, informs us that as last year he is again organising a party to visit the Isle of Man for the T.T. Races, and expects that at least fifty will travel from Nottingham. Motor cyclists in other towns should take this hint, as the various railway companies are usually willing to issue return tickets at a fare and a quarter to parties of a dozen and over.

Cyclists' Touring Club A.G.M.

At the A.G.M. of the Cyclists' Touring Club, held at Birmingham on the 10th inst., it was announced that the accounts showed a deficit of only £83, which compared with the losses of the last few years is an improvement. New members joining during 1910 show a considerable increase over those of 1909, and this year the increase is more than maintained. The resolution calling upon the council to issue a handbook gratis to the members did not meet with the approval of the meeting, and an amendment expressing belief in the present policy of the council was carried by ninety-three votes to two.

Hill-climb in N.S.W.

The Motor Cycle Club of New South Wales held a club hill-climb on the Baden Hill, Coogee, on Saturday, February 11th. There were eight starters, and C. Nixon (3½ Triumph), 5s., won the final in 33⅗s. from W. Miller (3½ T.T. L.M.C.), 1s. Miller did fastest time for the day—33½s.—in his heat. Nixon was riding in his first competition.

Tourist Trophy Race Fund.

Subscriptions are invited to the fund which is established annually to help defray the expenses, necessarily very heavy, of holding the Tourist Trophy Races in the Isle of Man. Donations should be forwarded to the A.C.U. secretary. The dates fixed for these events are :

Friday, June 30th, "Junior" T.T. Race.

Monday, July 3rd, "Senior" T.T. Race.

The First Slide Valve Motor Cycle Engine.

Though many designs of air-cooled slide valve engines have made their appearance, we believe we are right in saying that no engine of this type had actually run before the present year, and this week *The Motor Cycle* is able to illustrate the first motor cycle slide valve engine to run on the road. It is described in our letters columns, and the illustration shows that the construction is neat and exhibits much promise. Readers may expect to hear more of this interesting engine anon.

HERTS COUNTY A.C. OPENING MEETING AND NON-STOP RUN. Competitors assembling for the start outside the Pea Hen Hotel, St. Albans, on Saturday last.
(see previous page)

T.T. Items of Interest.

W. F. Creyton, the Triumph rider, is busy testing motor cycles again, and tells us that he is anxiously looking forward to the T.T. race on his native soil. Creyton hails from Ramsey. Four Ariels, it is expected, will be represented in the race, and A. V. Summer will ride one. The new Ariel engines will be increased in bore to 86.5 mm. to bring them nearer to the limit capacity of 500 c.c. The stroke will remain 85 mm. F. A. Applebee, jun., has entered a two-stroke Scott for the T.T. Race.

A Disclaimer.

Messrs. H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W.C., beg us to publish an apology to their many clients for what must have appeared to them very discourteous and unbusinesslike treatment. It appears that since December last postal orders and cheques have been diverted and many enquiries have not been dealt with. The matter was placed in the hands of Scotland Yard, and the apparent neglect of these matters has now been traced to a system of theft. Messrs. Taylor and Co. have undoubtedly sustained a large monetary loss through these thefts, and at the same time must have disappointed their patrons by their unconscious neglect of correspondence. They wish to assure all through these columns that extra precautions have now been taken to avoid a recurrence of these unfortunate incidents.

Heaton Woods on the Route of the Six Days' Trials.

Below we reproduce two photographs kindly sent us by Mr. G. Atkinson of the hill in Heaton Woods mentioned on the route for the fifth day of the Six Days' Trials. Mr. Atkinson remarks: "I think this bit will surprise some of the single gear brigade, as there is no chance of 'rushing' it. The photographs do not show the gradient very well, but give a slight idea of the corners."

The First Ladies' Competition at Easter.

In reference to Mrs. Hardee's remarks with regard to her desire to enter her P. and M. in the Herts County A.C. ladies' competition for *The Motor Cycle* Cup, we have heard officially on the subject, and are asked to state that men's machines ridden by ladies may not be entered, the view taken by the club being that those few manufacturers who have had the enterprise to build a ladies' model must be encouraged. Perhaps Mrs. Hardee will get over the difficulty by an exchange of mounts for this particular competition, being the first devoted solely to the lady motor cyclist.

At least six competitors are expected to start in the double journey event, Barnet-Harrogate-Barnet, as enquiries continue to be received by Mrs. Cooke, and the trial is creating enormous interest, having been referred to by the leading daily papers throughout the country. It should be noted that ladies may enter and gain an award for a creditable performance in either single journey, Barnet-Harrogate or Harrogate Barnet. Entry fees are 10s. 6d. for the double journey and 6s. 6d. for either single journey. Entries close on the 31st inst., and the start of the competition is on Good Friday at 7.30 a.m.

FUTURE EVENTS.

Mar.	23	A.C.U. Annual General Meeting.
,,	25	Brooklands first 1911 Meeting.
Apr.	1	M.C.C. Opening Run to Brighton.
,,	8	Oxford M.C. Open Hill Climb.
,,	14	(Good Friday). Annual Meeting of Northern Motor Cycle Clubs at Richmond, Yorks.
,,	14-17	M.C.C. London-Land's End Trial and Easter Run.
,,	14-17	Herts. County A.C. Inter-club Tour, to Harrogate and back, first Ladies' Competition, and Open Hill Climb.
,,	17	Westmorland M.C.C. Open Hill Climb on Shap Fell.
,,	22	A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,,	29	Bristol B. & M.C. Open Hill Climb.
May	6	Herts. County A.C. Open Hill Climb.
,,	27	Herts. County A.C. Open Speed Trials
June	18	M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.

Inter-club Hill-climb on Kirkstone Pass.

Members of the West Lancashire M.C.C. are requested to send in their entries for the Kirkstone Pass Hill-climb, to be held on Good Friday in conjunction with the Cumberland and County and Westmorland Motor Cycle Clubs as soon as possible.

Club Outings.

Club runs are now in full swing. On Saturday next, the newly-formed Dudley and District M.C.C. will hold its first run to the Hundred House, Witley. Next day the Derby and District M.C.C. has arranged a run to Bakewell, and the opening run of the West Lancashire Motor Cycle Club takes place to Whitewell, *viâ* Preston, Broughton, and Inglewhite, returning to Preston by Longridge. On Wednesday next the Surrey M.C.C. speed judging competition will take place from Guildford to Alton.

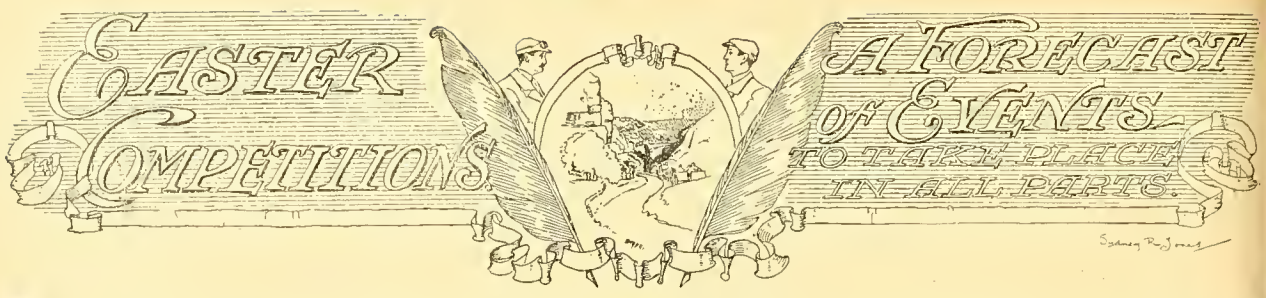
Police Activity at Southport.

Motor cyclists all over Lancashire, and especially those resident about Southport, will need to take warning of the attitude which the police have determined to assume regarding that popular circular tour provided by the road around the Marine Drive. When traffic is quiet it has long provided a good place for testing speed. The Chief Constable, Capt. Armitage, expressed his views on the question during the hearing of a case on Monday when Mr. Earnshaw, a local motor cyclist, was summoned for riding at an excessive speed on this drive on March 11th. He pointed out that although there was not much traffic the Drive was not a racing track for motors. The defendant was ordered to pay the costs, but it was stated that the next comer would probably not get off so lightly.

HEATON WOODS, to be climbed on the fifth day of the 1000 miles trial.

Looking up the hill.

Showing the twisty ascent. The gradient is said to be as steep as 1 in 4.



THE activity in motor cycle circles this Eastertide will be unparalleled in the annals of the sport. In north, south, east, and west competitions are being arranged, and many a motor cyclist is at present looking forward with feverish excitement to the thrills of a dash up a twisty hill against the watch, or a mile-a-minute gait on Brooklands. Every class of rider is to be catered for.

The Ladies' Competition—A Pioneer Event.

Pride of place must be given to the first competition for lady motor cyclists, for which *The Motor Cycle* has presented a silver cup. In years to come this competition will be referred to as is usual with such pioneer events as the first 1,000 Miles Trials, London-Edinburgh run, etc. Other reliability trials include the M.C.C. London to Land's End and back trial for the Jarrott Cup, and the inter-club tour Barnet to Harrogate and back, organised by the Herts County A.C.

Hill-climbs include the Cumberland, Westmorland, and West Lancashire M.C.C. inter-club event at Kirkstone Pass on Good Friday, the inter-club open event North v. South near Harrogate on Easter Saturday, and the Westmorland M.C.C. climb on Shap Fell and the Northern League competition at Staxton Brow, organised by the Scarborough M.C., on Easter Monday. Further varieties of interesting events will be the monster meeting of Northern motor cyclists at Richmond (Yorks.) on Good Friday, and the Brooklands A.R.C. meeting on Easter Monday.

Local club tours are being arranged by several organisations. The M.C.C. tour is to Yeovil, headquarters the Mermaid Hotel; the Birmingham M.C.C. members will journey down to Lynmouth, starting on the 14th prox.; whilst the Streatham and District M.C.C. and the Walthamstow M.C. have also arranged holiday tours. The Torbay and District M.C.C. will hold a reliability trial Torquay-Truro-Torquay on Good Friday, starting from headquarters at 8 a.m. Competitors reach Truro at about 1 p.m., and a stop of one and a half hours for lunch will be made here. The new county club, the Hampshire County M.C.C., will celebrate its opening run on Good Friday, the destination being Bishop's Waltham.

Twenty-one Clubs to Meet.

We enumerate the more important Easter motor cycle events. Firstly, on Good Friday there is the Richmond meeting, which practically all Northern clubs will attend, including the motor cycle organisations from the following towns:

Harrogate	Hull (Kingston)	Redcar
Leeds	Scarborough	Newcastle
York County	Pocklington	Halifax
Bishop Auckland	Pontefract	Bradford
Middlesbrough	Batley	Ilkley
Sunderland	Sheffield	Huddersfield
Hull	Derby	

It will be seen that a number of riders will travel big distances. Last year the Bishop Auckland Club had most members at the gathering. It is suggested that all clubs holding a competition *en route* to Richmond on that day wear various coloured armlets. The trials secretary of the Northern League, Mr Frain, will be glad to make arrangements for any checking at Richmond that may be required.

The Harrogate Tour and Jarrott Cup Competitions

On the same day the ladies' trial and inter-club tour to Harrogate will commence. Barnet being the scene of the start at 7.30 a.m. Competing clubs are:

The N.W. London M.C.C.	Harrogate and District M.C.C.
North Middlesex M.C.C.	Herts County A. and A.C.
Bradford M.C.C.	

The ladies' competition is for *The Motor Cycle* silver cup, whilst the Service Cup will be competed for by teams representing the Herts County A.C. and N.W. London M.C.C. The route is *via* Biggleswade to Norman Cross, Peterborough, Sleaford, Lincoln, and Gainsborough, joining the Great North Road at Bawtry, and on Easter Saturday an open hill-climb will be held near Harrogate for the Phelon and Moore Cup. The points scored in the hill-climb will be considered in making the awards for the reliability run.

At 3.30 a.m. on the 15th prox., those stalwarts who have entered for the M.C.C. Land's End and back trial will leave Kew Bridge in competition for the Jarrott Cup, and it may be observed that sidecars are included this year, and Messrs. Gwynne and Seed have promised a cup for the best performance in this class. The early start is to enable most competitors to finish in daylight.

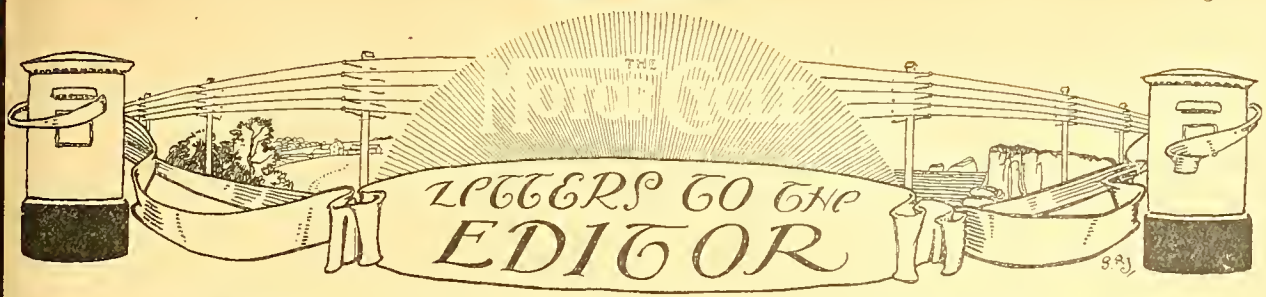
Easter Monday Events.

On the 17th prox., the return journey of the Harrogate tour and ladies' competition will be commenced, and also the M.C.C. Land's End trial. Hill-climbs include the Shap Fell event organised by the Westmorland M.C.C., to start at 1 p.m., and the Northern League Staxton Brow competition, organised by the Scarborough and District M.C.

Two handicap races for motor cycles are included in the Brooklands programme, (*a*) the second 65 m.p.h. handicap, and (*b*) the 70 m.p.h. handicap.

THE SCOTTISH SIX DAYS' TRIAL.

Mr. MacGregor informs us the Edinburgh Club intends to repeat its strenuous Six Days' Trial, and that the date will be near the end of July, probably July 24th to 29th, but details cannot be settled until the amalgamation of the Leith and Edinburgh clubs—now in progress—is complete.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Horse-power Rating.

[5485.]—Would it not be better to drop the present method of rating the horse-power of motor cycle engines and instead rate them in hundreds of cubic centimetres, using the decimal point. It is quite as easy to refer to a machine as "4 point 9" as to say "three and a half," and probably more true.

4.9.

Starting Difficulties.

[5486.]—I have read with interest your remarks under the heading of "Starting Difficulties," and the remedy which you advise. There is no doubt that reducing the size of the choke tube will give easy starting, but you will not get the full power when going "all out." The only solution to the difficulty is to have a carburetter with two jets and two choke tubes; this will give the strong slow pulling in traffic, and on hills the larger jet will give fast running.

I believe the two-jet carburetter originally introduced by myself has done as much to improve the running of the modern car as any recent invention, and what a motor cycle really wants is the same class of carburetter, and this my firm are now putting on the market in a greatly improved form, and I believe what this type of instrument has done for the car it will do for the motor cycle, namely, give a degree of power at slow speeds, easy starting, and a flexibility that has not yet been attained.

CHARLES BINKS.

Best English and American Times.

[5487.]—I notice a paragraph in "Current Chat," entitled "Best English and American Times," concerning J. De Rosier and the world's hour record ride which he recently accomplished.

You say that on the occasion of the record in question "De Rosier rode a 7 h.p. Indian, and it is a curious fact that at the fastest speed yet accomplished on Brooklands was on a similar mount, yet the speed was 10 m.p.h. slower." This, I think, is hardly fair comment, as if De Rosier is going to break any world's records when he comes over to this side I shall be pleased if someone will have the kindness to inform me where he is going to find a suitable track, as in my mind it is absolutely impossible to ride a machine a distance of over eighty miles in an hour on Brooklands.

I do not think there are many people who can accuse me of lacking nerve, but I must confess that last week I went down to Brooklands and tried my 7 h.p. racing Indian for the first time, and it is the only machine I have ever ridden which I really "funked" to let all out, owing to the simply awful bumps on the track when travelling at speeds of between 75 and 80 m.p.h., although the steering on the smooth portions of the track is perfect.

Surely it is a very different proposition to ride the machine on an absolutely smooth wood track which is built in a perfect circle, especially when such a hardened rider as De Rosier is in the saddle. If the writer of the notes in question doubts my statement at all, I shall be only too pleased to give £10 to any charity he likes to name if he will ride my machine, or any other for that matter, one timed lap round Brooklands at a speed of 76 m.p.h., provided he takes full responsibility for himself and will pay any damage done to the machine, which is quite capable of doing over 80 m.p.h.

OLIVER C. GODFREY.

[We withhold a letter couched in much the same terms which has been received from W. H. Wells.—ED.]

Over the Quarterly Trials Course.

[5488.]—Being attracted by the article and illustrations of the Yorkshire Centre Quarterly route appearing in a recent issue of *The Motor Cycle*, I took advantage of a fine week-end and journeyed over the course, which is a beautiful and most sporting run.

The roads for the most part are in fine condition, Sutton Bank and thereabouts being the only exception. The route abounds with pretty spots, picturesque ruins and pleasing gradients, and the ride from Pickering to Whitby is particularly magnificent, the moors being delightful and roads good. After Whitby I left the course and went down to Robin Hood's Bay, intending to visit Stoup Brow, but as rain fell heavily on my arrival I decided to postpone my visit and leave this rambling old-world spot and climb the steep hill I had just descended. This hill has a left-hand right-angled corner, and the road being only a few feet wide prevents any rush being taken at the very steep gradient which commences immediately round the corner. I, however, succeeded in getting up at the first attempt, much to the surprise of the inhabitants, who all came out and evinced a lively interest in the motor cycle. Once at the top I retraced my steps to Whitby, and from there rode straight up Boulby Cliff, which is a long, straight, but very steep hill, with a surface like Sutton Bank, the view from the top being most charming—a fine stretch of sea cliff on the one side and the hills and moors on the other. From here I now made for Saltburn, and then right along to the finishing point. The monotony of purring along flat country does not trouble one on this route, as it is dotted with lovely test hills all along. I shall look forward with interest to the results of what will be a very fine test for the motor cycles and their riders.

REKAV, JUN.

The Sidecar in Egypt

[5489.]—I am the owner of a 1909 Triumph, and I always welcome Wednesday mornings as the mail brings me my copy of *The Motor Cycle*, which is always read with interest, as I find it full of useful tips and information, besides matters of interest to me in general.

I enclose a little photograph of myself on my Triumph with sidecar, my small son in sidecar, which I thought might be of interest. You will see a few palm trees in the background. This photograph was taken in the public garden near Alexandria.

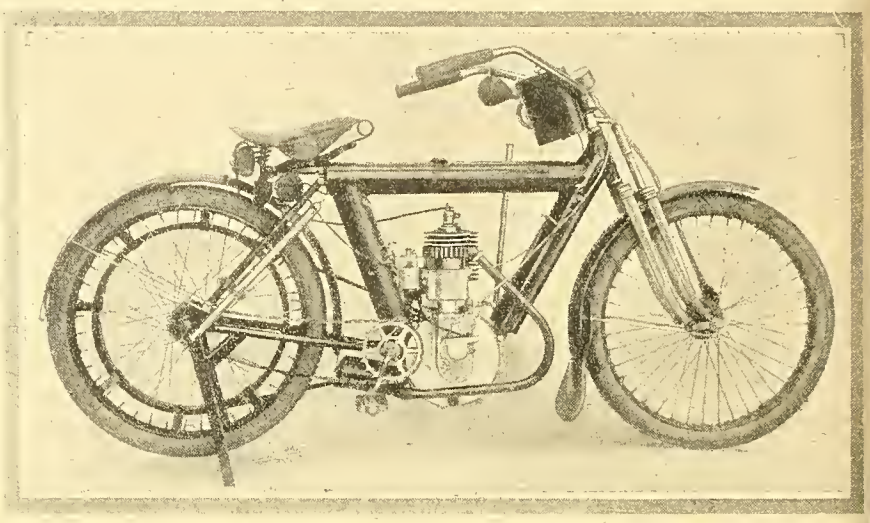
Sidecaring in Egypt. (See letter No. 5489.)

I again express my warm appreciation of your paper.

Alexandria. DOUGLAS ALLEN.

The First Slide Valve Motor Cycle Engine.

[5490.]—As *The Motor Cycle* and its readers have shown especial interest in the various improved types of engines which have been brought to their attention, I send herewith a photograph showing what the writer believes to be the first motor cycle equipped with a slide valve type of engine, this machine having been first operated on the road on January 6, 1911. It has worked in an exceedingly satisfactory manner, and, though given some severe tests, there has not been a single part of the engine break or a single change made in any of its parts from the original designs which the writer made for it. The engine has shown remarkable cooling capability (the reason for which will be obvious later), and is, so far as the writer is aware, the only one having a slide valve mechanism successfully to withstand the severe conditions incident to air cooling. It is remarkably quiet, even the exhaust seeming to have less sound than when poppet valves are used. The engine is 3½in. bore × 4in. stroke, while the machine weighs about 200 lbs., and the gear ratio is 3½ to 1. This gear makes the machine rather fast, while it is somewhat severe on the engine owing to its relatively low speed when traversing bad roads and hills at a slow pace, under which conditions the engine has, however, shown remarkable pulling ability.



Is this the first slide valve engined motor bicycle? (See letter No. 5490.)

The construction of the valve mechanism briefly described is as follows: In place of the usual camshaft there is mounted in the valve casing a small crankshaft having one ⅝in. throw pin (two cranks per cylinder are required in some other systems), this pin being connected by a short connecting rod to a 1½in. diameter valve piston, so that this piston (the piston is rather long and is fitted with a special triple ring at its upper end) would be reciprocated in the valve cylinder, which is at the side of and parallel to the main engine cylinder, once to every two strokes of the engine piston. The valve cylinder has two annular ports, the upper of which opens into the exhaust chamber and the lower into the inlet chamber, so that the valve piston would, in its downward movement, first uncover the exhaust port and then the inlet port. In order to avoid drawing the exhaust gases back into the cylinder on the suction stroke, when the piston valve has opened the intake port the exhaust port is arranged so that it can be covered by a light ring, which is pulled down to close the exhaust ports by the movement of the main valve piston, and remains down during the suction and compression strokes.

The operation of this form of my valve mechanism is as follows: At the beginning of the expansion (explosion) stroke the valve piston is at the top of its movement closing all ports; at the beginning of the exhaust stroke the valve piston has moved down part way past the exhaust port partially opening it; at the beginning of the suction stroke the valve piston has moved far enough to commence to move the auxiliary ring to close the exhaust port, and is about to begin to open the inlet port; at the beginning of the compression stroke the valve piston has changed its direction of motion and is about to close the inlet port, and at the end of the compression stroke and beginning of the expansion stroke the parts have returned to the positions first mentioned. It will be noticed that the fresh cool charge comes in over the top of the valve piston and the other heated parts, thus serving to prevent overheating and at the same time ensuring a better vaporisation of the mixture. Another feature is that the tendency of the pressure on the top of the valve piston is to rotate the valve shaft, thus adding to the engine power instead of taking power from it to work the valves. For these reasons the writer prefers, although the U.S., Canadian, English, and foreign patent applications and patents cover the use of sleeve valve arrangements, the piston valve in a mechanism of this type.

It may be well to say that the oiling of the motor cycle engine shown is accomplished perfectly by feeding the oil for the engine through the valve casing, and that, although the valve piston is absolutely unbalanced, its movement does not show the least tendency to cause vibration, as will readily be apparent when its light weight and low speed are considered. A. E. OSBORN.

New York.

[At this time, when attention is focussed on slide valve engines, the motor cycle described and illustrated should prove of especial interest, being, so far as we are aware, the first to run with an air-cooled slide valve engine. We may add, for our readers' benefit, that *The Motor Cycle* is aware of experiments proceeding in connection with air-cooled slide valve engines in this country. Although the engine described by our correspondent is termed a slide valve, it would be more correctly described as a piston valve engine.—ED.]

The Inter-club Team Trial.

[5491.]—I was very interested to read Mr. J. Van Hooydonk's remarks *re* the above. In my opinion it is an absolute fact that the M.C.C. Team Trial and the A.C.U. Inter-club Championship are absurdly simple.

A club that is entering a team for either of the above events naturally selects its very best riders to represent it, with the result the very *crême de la crême* of reliability riders meet, and have to trundle over a course of 100 miles to decide who is the victor. Many of these riders have gone through the gruelling of a twenty-four or twelve hours' trial, so as to have the honour of representing their club, and then to ask them to ride 100 miles for the supreme test sounds, I think you will admit, absurd.

I beg to suggest the following, and in so doing am certain that I am voicing the opinion of very many motor cyclists.

1. That it take the form of a twenty-four hours' trial.
2. That the route be from London to Edinburgh.
3. That all competitors ride to sealed watches on their own machines. The sealed watch system is certainly the fairest way of checking; for it is hardly reasonable to expect that if a competitor sets his watch from the checker at London, it will correspond to the second with the checker's watch at Newcastle.
4. That all times be taken from the sealed watches.
5. That checks might be taken at any of the places named on the route card, or at any milestone.

With regard to checking, I should like to suggest that for every fifteen seconds a rider is *before* or *after* his time at any check, either a known or secret one, he shall lose a quarter of a mark.

The above is, I think, a trial worthy of any final, as it would not necessarily "out" a team because one of its riders punctured.

J. NORMAN LONGFIELD.

[OWING TO GREAT PRESSURE ON OUR SPACE, IN CONSEQUENCE OF THE NUMEROUS SPECIAL FEATURES, WE ARE OBLIGED TO HOLD OVER MANY INTERESTING LETTERS THIS WEEK.—ED.

BROOKLANDS

BRITISH MOTOR CYCLE RACING CLUB,

18th March, 1911.

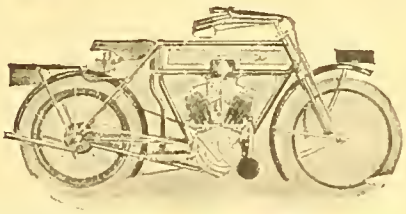
At the FIRST meeting of the Season in the FIRST event
—the All Comers' Penalty Handicap—

BAT WAS FIRST.

Also in the FIRST Senior T.T. Race

BAT WAS AGAIN FIRST.

Particulars of 1911 Models free on request.



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S. & H.

T.T. NOTES.

THE

MATCHLESS

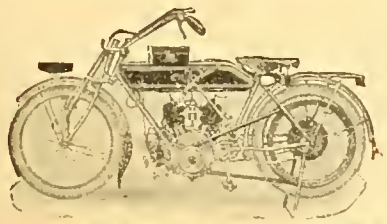
MOTOR CYCLE

WON THE T.T. ON THREE OCCASIONS.

On Saturday last at the B.N.C.R.C. Meeting at Brooklands, in the initial test race for machines in the newly-planned

JUNIOR T.T. RACE THE MATCHLESS AGAIN WON,

and in the Senior T.T Race the MATCHLESS held the lead for the greater part of the hour until put out by a broken belt.



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Extremes Meet

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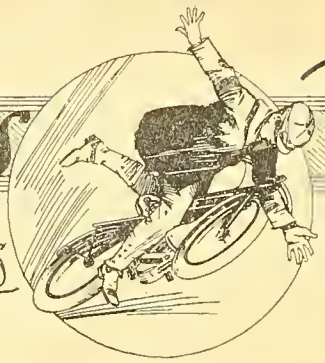
by B. H. Davies



"The treacherous machine lay down under me at thirty-five miles per hour."

WHEN we look back over our ridin' experiences, it is very hard to say which were our pleasantest runs—whether indeed the long no-trouble journeys linger sweetest in our memories, or those terrible trials of endurance, way back in the dark ages of motor cycling, when we were up against it all the time. So, at least, it is with me. I particularly recall several rides which I described as awful when I tottered in home weary, wet, wrathful, and filthy, but which I would not to-day eliminate from my memory for all the petrol that ever flowed through a carburetter. Several of those rides imply no blame of the machine, which was the principal actor. For instance, in 1902 I rode from Barnstaple to Bristol with a couple of novices, all of us mounted on the staunch old 2¾ h.p. Excelsiors, which were then the machines *par excellence*. I had absolutely no trouble from beginning to end, but one of my companions was afflicted with a split inner tube when we left Bristol on the return journey at 4 p.m. We spent many hours alternately waiting for him and mending his tube. Long after nightfall we got him right. By this time the two of us had burnt all our carbide in illuminating his repairs. He promptly sped away into the gloom, and deserted us. More carbide was unobtainable. My remaining companion and myself trickled slowly and timidly along the twisty lanes of Devon in the darkest night of the century. Presently we lost each other, and finally we lost our way.

Some Heroic Experiences.

I spent a most lurid night. Now I clambered down rocky and precipitous cliffs to fetch water in my cap from attenuated torrents, in the vain attempt to resuscitate

"I climbed down rocky and precipitous cliffs to fetch water in my cap."

the sodden carbide in my generator, usually tripping over a boulder in the inky gloom, and spilling the hard-won contents of my rather porous cap. Anon I essayed mountainous hills on a quarter throttle, and collided with high hedges at the first corner. Often I lay down by the roadside—usually in a nettle-bed—and prayed for dawn. Finally, I reached home after twenty-four hours and two hundred miles of road, to start *a fourteen-hour working day*. Or, again, I recall the 1906 Land's End-John-o'-Groat's run, in which I secured the hardest-earned "gold" ever awarded in the annals of motor cycling. Immediately prior to the start of the run, a certain two-speed gear had been (very badly) fitted to my 3 h.p. Triumph. During that ride every conceivable trouble befell me, not once but many times. I had a

Our valued contributor, Mr. Basil H. Davies, and the 1903 pattern 2¾ h.p. Excelsior, with surface carburetter, which proved one of the most trustworthy of the many motor cycles he has owned.

score of punctures, I wore out countless exhaust valves, I was permanently afflicted with bad lubricating oil, and twice my chains jumped off and pitched me over the handle bar. When I at last got the engine running well, the treacherous machine lay down under me at thirty-five miles an hour on a patch of grease, and bruised every square millimetre of hide on my body. Next my engine sprockets flew off into a ditch, and it took me four hours to fake up a key and lock-nut after I had found the missing parts.

The End at Last.

After much perseverance I trickled into John-o'-Groat's a ridiculous and lugubrious figure, with my overalls hanging in ribbons, my lamp tied round my neck with string, a spanner in one hand wherewith to clump the high gear clutch, a penny in the other to replace a broken exhaust valve lifter, and a crank pin so badly strained that the machine could not possibly have run three miles further! Or, again, I recall a more recent ride from Northampton to Durham in torrents of rain and distinctly permeable overalls. On this occasion the machine behaved perfectly, and my *bête noire* was a worn engine pulley, combination with three rubber belts, whi did not fit it. Since that ride I know eve dead leaf along the Great North Ro by heart; for did I not spend the ent day cutting, drilling, and piecing unc every green tree, while the pitiless ra entered the back of my neck and trickl icily down to the hem of my trouse Not one of these runs would I ha missed for all the gold of the Aztecs.

On the other hand, the triumpha straightaway runs, devoid of pneumat mechanical, or police incidents, have th honoured nooks in one's reminiscences, a on the whole outnumber the hoodoo da even with such a careless and unluc wight as myself.

A Friend in Need.

Do I not remember a run—gigantic those days—from Penzance to Maidst about the year 1903, again upon my tru old 2¾ h.p. Excelsior? I do not th the machine was touched on this jour except to refill the tanks, and my re lection is that it never ran better climbed so fast, while the weather positively gorgeous. Still, there wa fly in the ointment. I left my sovere purse on the dressing-table at Penza and, after settling the breakfast bill a Clifton hotel, made the sad discov that I had only a few coppers remaini As I banked at Oxford, I decided to m a detour, and obtain some dibs. Of cou when I got to Oxford, the bank was s for early closing day. By this time blazing sun had robbed me of my n too plentiful wits, and, instead of kn ing up one of my numerous acquaintan in the University city, I rode on lik man possessed into Surrey. By the t I got into the Guildford district, I raging for drink, and eke for food, but parched brain was not sparking freely, and nothing occurred to me ex to call on a few friends living at inter of thirty or forty miles apart. B August, of course they were all away the sad sea waves. At one mansio did unearth the sister of an old college chum, but I had never met her before, and my appearance evidently did not inspire her with either interest or respect. I was lean, haggard, grubby, and wild-looking. So I weakly regretted her brother was away, and rode off still penniless, and, worse, with

"My appearance evidentl not inspire her with e interest or respect.

remes Meet.—

a few inches of petrol in my tank. eabouts I committed my supreme iness. I passed the very gate of a e where my best and choicest pals supposed to be enjoying a reading y near Shepperton—a party I was due in the next week. But I had confused perton with Sheppey, and imagined it near the mouth of the Thames, so name "Shepperton" on a signpost eyed nothing to my bemused brain. actually saw me from the garden, gnised me, and shouted—all in vain. nally, as I entered Cobham, my petrol out. Great men rise to emergencies, it is said, and this final urgency set my wits to work, albeit rather rustily. Selecting the nearest tavern, I chucked my machine against a wall, stalked majestically in, and addressed the buxom Hebe thus: "Miss, I have no money. Can I have a good dinner and a bed for the night?" She replied bluntly, "Certainly not!"

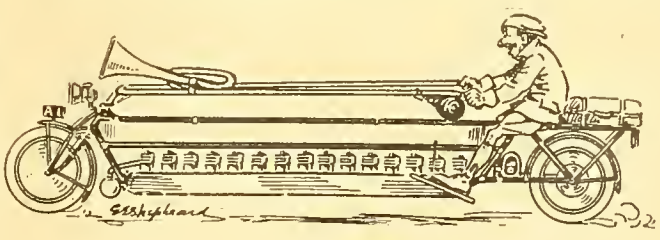
I again seek Shelter.

I was quite hurt, but her treatment of me was inspiring, and, dotty with thirst and sun and hunger as I undoubtedly was, I did not repeat my error. I walked to the White Lion, and handed my machine haughtily to the ostler, withered the various servants I met with my best Oxford manner, ordered the best bedroom, the best dinner, and the hottest bath the house could afford. Then I slept the sleep of the just. Next morning I was what the Scots call unco' canny. I ate the biggest breakfast of my existence, thriftily replenished my tanks, put the machine outside at a comfortable distance from the door, and sent for the proprietor. "Look here," I said, firmly, "I have no money!" "Certainly, Mr. Davies," was the urbane reply, "how much do you want?" Imagine my forgetting that the White Lion belongs to the genial treasurer of the A.C.U.—our one and only "Bath Road Smith"!

EXTREMES MEET. Another aspect, with apologies to Mr. Basil H. Davies.

THE JOINT CONFERENCE.

FERENCE has been made in these pages to a National Council of Automobilism, consisting of delegates from the Royal Automobile Club the principal motoring bodies, including the o Cycle Union. Motor cyclists may, therefore, assured that their interests will not be overlooked t, however, must not be lost of the fact that it is ost difficult matter to get a tax removed after e being levied, and therefore any hopes of the ission of the £1 local taxation licence are rather ote. The poorer members of the motor cycle munity undoubtedly feel the burden of taxation, they have the small consolation of knowing that increase of 5s. over the old tax might e been much greater had not Mr. Robert Todd e years ago put before the Chancellor of the hequer an idea of the capacity of the pockets of or cycle users. There is also a small amount of sfaction to be gained by knowing that a part of the taxation levied upon motorists is in future to go towards the upkeep of the roads, but no one knows why other users of the King's highway, such as owners of cycles, horse-drawn vehicles, and horsemen should get off scot free. This latter point, and the reduction in the taxes on second-hand and old pattern machines of doubtful value, the Conference will have to consider, and it is to be hoped that the efforts of that body will be crowned with success.



Constant torque.

SOME LESSER KNOWN ACCLIVITIES.

Formidable Ascents North, South, East, and West.

HILL-CLIMBING has always attracted sportsmen of all countries and classes. Whether the hills or mountains are ascended on foot, on mule-back, or horseback, matters little, so long as the aspirants to higher altitudes attain their object. Motor cyclists have always had a keen ambition to climb anything in the nature of an acclivity where there is room for the wheels of their machines, and atrocious indeed are some of the surfaces on hills which have been conquered by the riders of single track motor cycles. With this knowledge in view, we came to the conclusion that a description and some illustrations of a few of the lesser known steepest hills in England would interest readers, particularly at this season, when new models are being delivered, and their eager purchasers are on the look-out for fresh hills to conquer.

In Honister and Salt Box we have purposely chosen two hills which are not very well known to the majority of motor cyclists, but they have been brought into prominence in our pages during the last few months by the performances of various riders. Stoup Brow is on the route chosen for the A.C.U. Six Days' Trials, and appears well nigh unclimbable, and we do not know of any motor cyclist who has climbed it. Barbrook Mill, or Beggars Roost, is probably the worst hill in the West, but it has been referred to in these pages before.

NORTH.—HONISTER PASS.

Honister Hause, or Pass, as it is more familiarly called, can justly be regarded as one of the worst acclivities in England. With a treacherously loose surface composed of shale and loose stones, and a mile and threequarters of single-figure gradient Honister is well calculated to tax to the utmost the capabilities of both man and machine. It is quite impossible to steer a straight course, and on any one of the numerous bends it is the easiest thing in the world to "come a purler."

Six months ago the Pass was reputed to be unclimbable on a single-geared motor cycle, but last October two dauntless members of the West Lancs. M.C.C. (Messrs. Gregson and Gibson) made clean ascents on single-geared pedalless machines. The news of this performance created considerable controversy in this journal, but the sceptics have not been heard of for some time, as during the past few months at least half a dozen men have successfully climbed the Pass, whilst quite recently Messrs. H. Gibson and A. Harrison made clean ascents on different days. The West Lancashire, Westmorland, and Cumberland County M.C.C. propose to hold a hill-climb on the Pass on Easter Saturday.

HONISTER PASS.
Looking down the upper steep pitch into Borrowdale.

(2) The two sharp corners and the second pitch.
(3) The steepest stretch on to the fell side road.
(4) The second steep pitch, showing the second sharp corner
(5) Climbing the upper steepest pitch, before emerging on the fell side road.

Lesser Known Acclivities.—

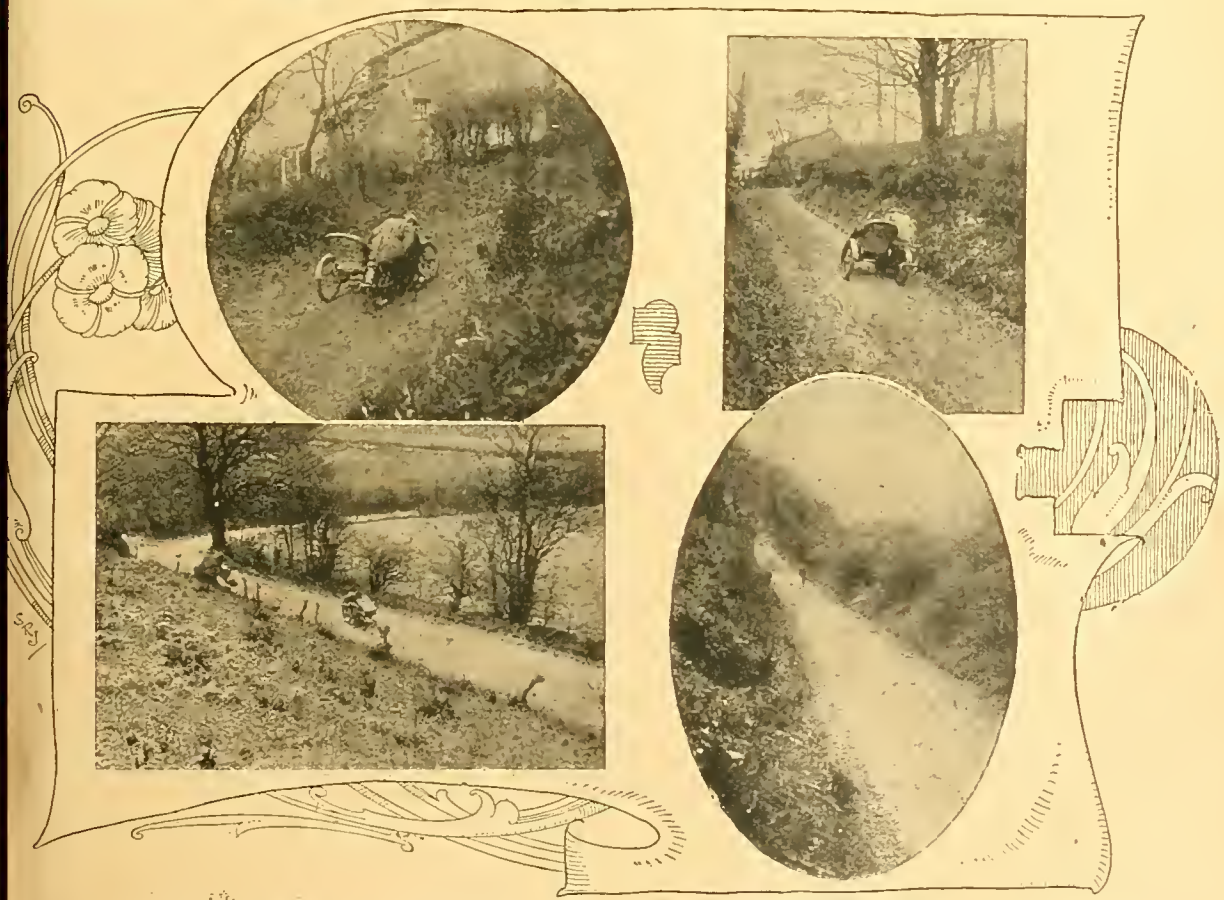
onister Pass lies 7½ miles south-west of Keswick he southern extremity of the lovely valley of owdale Borrowdale is really the only practicable oach to Honister for motor vehicles. The road abruptly from the village of Seatoller, and winds way upwards for 1¾ miles, the summit being e 1,150ft. above the sea. The Gall and Inglis our Road Book (No. 175) gives the gradient at les and 9¼ miles as 1 in 6, but this can only be short distance. The average gradient must be t 1 in 10, according to the following figures, h were kindly supplied by the district surveyor ockermouth:

Furlongs.	Rise in feet.
1	56
2	22
3	55
4	35
5	120
6	23
7	97
8	33
9	52
10	53
11	21
12	54
To summit	150
	771

The summit on the old road is considerably higher than the actual summit by the gate on the new road. From the Contour Book the total rise from just below Seatoller is given at well over 800ft. The hill rises in a succession of short steep pitches, broken by stretches of moderately easy gradient, and given a decent surface the Pass would be an ideal spot for an open hill-climb. Expert riders who have ascended it are, however, of the opinion that it is far too dangerous for an open event.

Luckily there are no sharp corners, but the bends are most difficult to negotiate owing to the quantity of loose stones that abound. The first bend to the left is struck almost immediately after leaving the village; the gradient on the knuckle is in the neighbourhood of 1 in 5. Then follow two short stretches and two more bends to the right, the gradients on the bends being about 1 in 5 and 1 in 6. Approaching a small hut, the road veers to the right, then turns to the left; this is the longest and most severe portion of the climb, the gradient being mostly 1 in 5, and the surface on the bend is very loose. Up to this point the road runs along the edge of a deep ravine, and a skid or toss to the left would be most disastrous. There is no bank or railing of any kind to prevent machine and rider from going over in the event of a spill. From the hut upwards the rest of the climb is fairly easy until within sight of the summit. At

SALT BOX HILL—so christened by "The Motor Cycle" and recognised by motor cyclists—although its proper name is CROWN ASH HILL.



(1) The steep bend at the top.
(2) A very trying stretch, showing a P. & M. and sidecar ascending.
(3) The right-angled bend about a third of the way up. The start is at the junction of the two roads seen.
(4) General view of hill between the two bends.

Some Lesser Known Acclivities.—

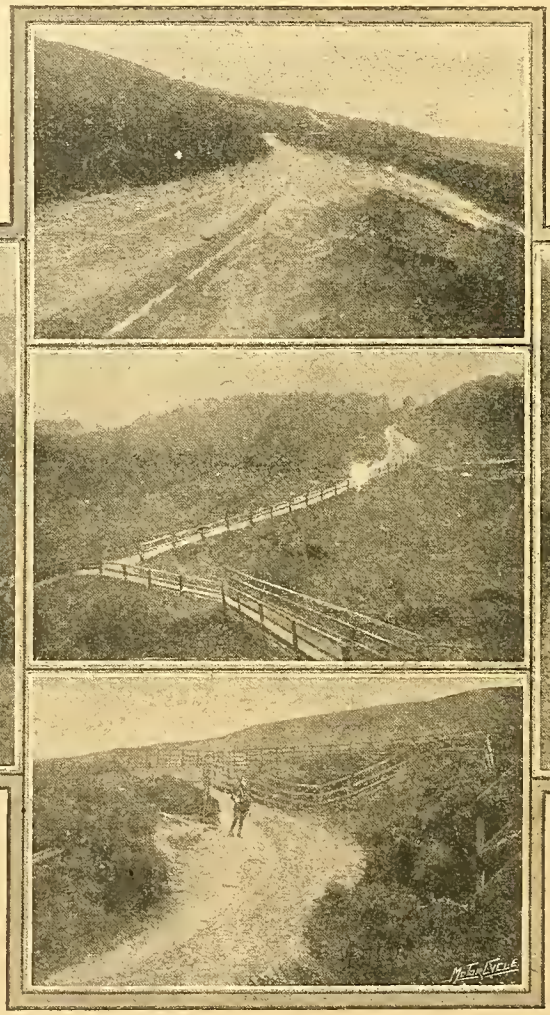
the junction where the new road crosses the old another bad patch is struck, the surface being abominable. It would be better for the competitors to finish at this point and use the new road as a finishing straight, otherwise many a poor rider will experience the cruel ill-luck of coming a cropper within a short distance of the gate at the summit of the old road. Altogether Honister Pass is a terrific climb and a severe strain on a rider's nerve.

SOUTH.—SALT BOX HILL.

Correct Title: Crown Ash.

A few weeks ago we investigated a very sharp climb in the parish of Cudham branching off the direct London - Westerham Road almost opposite the Salt Box refreshment house, a favourite rendezvous with beanfeasters in the summer months, and one of the several tea gardens situated on the London side of Westerham Hill. At first glance the hill appears to be a sheer drop into a wooded ravine, and our correspondent named it at the time "Salt Box," but has since found that its name is Crown Ash Hill.

STOUP BROW, a "mere moorland track" on the route of the Six Days' Trials.



A stretch of 1 in 3, with the North Sea in the background.

(1) Showing the bad state of the roads.
(2) A few yards to the left, the road ends on the sea beach.
(3) The "S" bend on the 1 in 4 portion. The road winds in the direction of the railings.

Near the hill foot. The footbrid path lead to Robin Hood's B

The few trials that have already been held have demonstrated the fact that the climb is more than sufficient severely to try a well-tuned and powerful mount. This with cool engines! Taken "on the run," after the eight miles of undulating and twisty roads from Warlingham and Chelsham, it provides about the stiffest test obtainable anywhere in the London district, and will no doubt be resorted to in the future.

Will Improve with Wear.

At present the surface is abominably loose, with planted and loose round stones—a most tricky ture"—whilst at the foot it is grass-grown, and more than a rough country track. Cudham Hil almost as bad in the early days, and no doubt Sal will be improved with the rolling of motor w A survey with a gradometer shows an average gra of 1 in 6, the worst bit being at the finish— yards of 1 in 4. With the chalky soil (and clay soil) the climb would be additionally severe i weather. It is certainly an excellent test, and ha advantage of being handier to the Metropolis Cudham or the other b known test hills.

EAST.—STOUP BR

Very few steep hil Yorkshire remain uncli by motor cycles nowa and as soon as a steep alleged unclimbable gr has been the scene of a climb, and a few ma have succeeded in re the summit unassiste fame quickly wanes, efforts are made in all tions to find a "new"

An unusually sever has evidently just bee covered by the A.C.U., included in the route f Six Days. On the thi riders will proceed from Scarborough to Hood's Bay *via* Ravenscar and Stoup Brow.

This hill has been known to us for many but we hardly thought of it as part of the Six route. Not that we consider that it is absolut possible for it to be climbed by a good variably

ne Lesser Known Acclivities.—

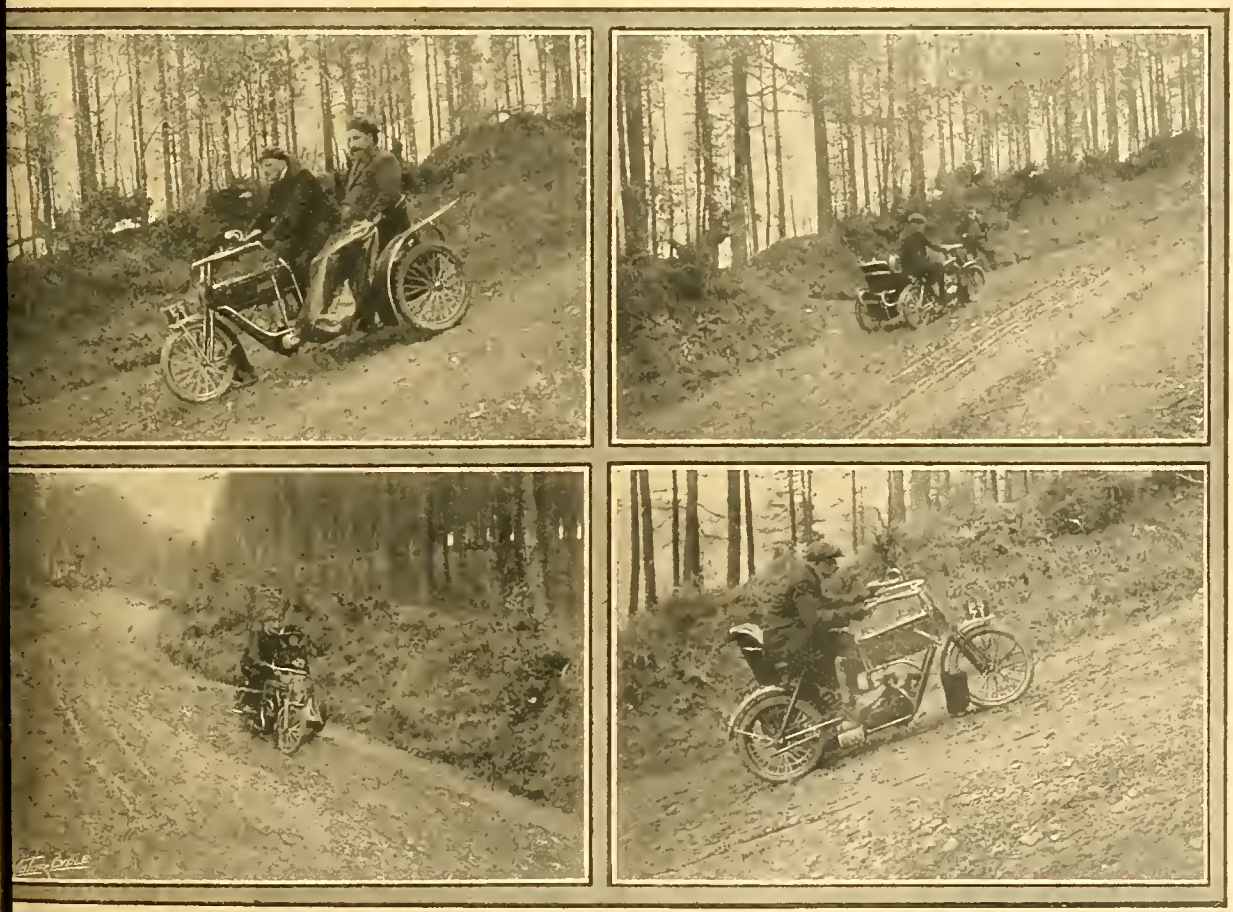
tor bicycle, but in its present state we think it is solutely impossible to ride up Stoup Brow, or Bank it is called, on a single-geared machine using an rage touring gear ratio. The hill is easily reached m Scarborough by proceeding down the main road l through the little village of Scalby and then on Cloughton, where the road branches, the main d continuing up the hill to the Falcon Hotel and oss the moors to Whitby, and the other one lead- to Heyburn Wyke, Ravenscar, and Robin Hood's y. At Ravenscar, or the "Peak," the cliffs are said be the highest in Great Britain, and on a clear the view across to Robin Hood's Bay is magnifi- t. Here we are at the summit of Stoup Brow, and road is a mere moorland track, with heather and cken on either side. The hill itself is about two es long, and gradually descends to where a rail- bridge crosses the road. At this point there are eries of S bends on a gradient of about 1 in 4 for e or four hundred yards. The surface is also vile, ng composed of alum shale, which is slippery even the driest weather. After the final twist of the l the hill runs fairly level for about half a mile, n on reaching a lonely farmhouse it suddenly ps down the side of a steep ravine down the centre which flows a stream, which, like all mountain lets, is rapid and strong in rainy weather.

This stream crosses the road which descends for the last five hundred yards in an unrelieved gradient of about 1 in 3 direct on to the beach, and at low tide a ride of a mile along the sands brings one to Robin Hood's Town—probably the most picturesque and romantic little place on the East Coast.

We recently visited this hill, and found the road from Cloughton to the bottom of the hill in the worst condition possible, the surface on the 1 in 3 portion being composed of a mass of large stones as loose as shingle. This rough surface makes the hill unrideable, and in addition there is no possibility of a run before striking the gradient.

Riders who wish to visit this spot should not attempt to take their machines to the foot of the hill, for if the tide is up to the cliffs (as was the case when we were there) there is no means of regaining the road except by pushing the machine up—a by no means easy task to accomplish.

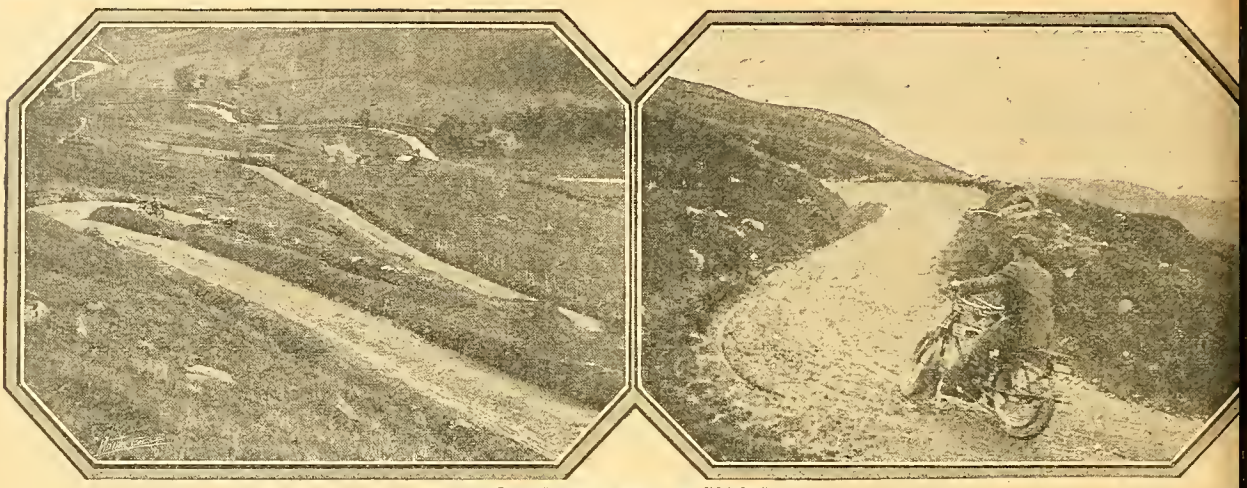
However, the motor cyclist who wishes to spend an afternoon amongst most splendid scenery can do worse than survey Stoup Brow. There is a splendid run across the moors, and a glance at Robin Hood's Bay and Whitby will compensate for the roughness of the road. The distance from Scarborough to the top of the Brow is ten miles, and thence to Robin Hood's Bay is three or four miles. The photographs on the previous page show the state of the surface.



BEGGARS' ROOST, OR BARBROOK MILL HILL.

A two-speed twin-cylinder N.S.U. with sidecar is seen climbing this notorious Devonshire gradient, which at one point is as steep as 1 in 3.6.

Some Lesser Known Acclivities.—



CLIMBING AMULREE IN WINTER.

The rider is W. Houghton, who was one of the competitors in the Six Days' Trials and failed on this famous ascent. Houghton recently paid a return visit to Amulree and made fifteen attempts to climb the hill, ten of which were successful. His friends have now nicknamed him "Amulree."

WEST.—BARBROOK MILL OR BEGGARS' ROOST HILL.

This Devonshire gradient is found by following the Watersmeet Valley from Lynmouth for two miles. At the first turning a right-hand road is taken, and in a mile or so one comes to the top of the steepest hill in the neighbourhood of Lynton and Lynmouth, a district abounding in precipitous gradients. Two years ago we had this hill surveyed at the suggestion of Mr. I. B. Hart-Davies (who has climbed it), and found that the steepest gradient is 1 in 3.6. The hill is one of the most difficult to climb on a fixed geared machine, because the start is limited to about forty yards of 1 in 26, after which a single figure gradient is struck, and it gradually becomes steeper and steeper, going from 1 in 9.1 to 1 in 7.3, then 6.2, 5.2, 4.3, and 3.6.

After these formidable sections have been conquered there still remains a long section of 1 in 5 to 1 in 9, again a piece of 1 in 5 to 1 in 7; after that it tails off to the summit, where it is 1 in 19.

The total length of the hill is about 1,000 yards, and in this distance it rises about 350 feet, so that the approximate average pull is 1 in 8½. The surface of the hill is usually in a very rough state, and when our representative visited it to take the photographs which accompany this article, he reported that it is exceptionally bad just at present, being covered with a paving of rough local stone.

Amulree—the Scottish Terror.

Perhaps this article would be incomplete without some reference to the famous Amulree Hill, which, however, is comparatively well-known, as it figured so prominently in the A.C.U. End-to-end trial last year, when only a small percentage of the competitors succeeded in making a clean ascent. This is not surprising when it is considered that the gradient is as bad as 1 in 4 in parts.

There are few hills in the United Kingdom which make greater demands on the skill of a rider and the efficiency of his engine.

Conclusion.

With this Scotch terror we bring this article to a conclusion, and would like to point out that in many instances there is no necessity to climb these exceptionally severe hills. Usually there is an alternative rou which allows the most awkward precipices to avoided, but there will always be a number of sporti enthusiasts who will not be denied when there is a h which remains unconquered and a road on which th can ride without being thrown out of the saddle.

Far from the madding crowd.

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Spring Forks and Sidecars.

I have a twin N.S.U. and sidecar. The frame is rigid, and I propose to fit spring forks, but am told it will affect the steering seriously. I understand that the makers supply a spring fork that is easily fitted. Will you kindly advise me regarding the steering, and also your opinion of the spring fork mentioned?—J.S.H.

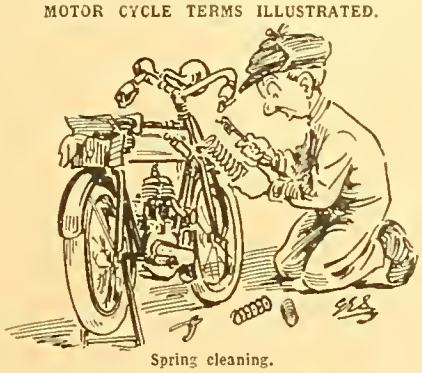
e should advise you to communicate th the makers of your machine and hy their advice. Certain types of ring forks do run out of truth when lecar attachments are added. The lecar is used so largely with the rticular make you mention that it is likely the makers would supply you th a set of spring forks which would t work well when one is attached.

A Beginner's Queries.

A few weeks ago I purchased a copy of *The Motor Cycle*, and have become so interested in motor cycles that I should like you to answer me the following questions: (1.) What is compression? (2.) What is the meaning of a to 1 ratio? (3.) What relation is there between the magneto and the engine?—N. S.

) Most motor cycle engines work on at is known as "the four cycle system." As the flywheel turns, the piston scends and the inlet valve opens, with e result that the piston draws in a xture of gas and air; having reached e bottom of its stroke, the piston ends and compresses the gas into a all space. This is known as "compression." The effect of this compression is to render the charge highly explosive. At the moment of compression th valves are closed, and just before e piston has reached the top of the stroke, the spark from the magneto or accumulator fires the charge, when the piston descends rapidly, and the flywheel retains sufficient energy to raise the piston again, when the exhaust valve opens and expels the gas, and to draw in the next charge and compress it until it is ready to fire again. (2.) One talks of there being a 5 to 1 ratio between the engine and back wheel, which means that the back wheel revolves once to five revolutions of the engine. (3.) The magneto is a small electrical machine for mechanically

MOTOR CYCLE TERMS ILLUSTRATED.



Spring cleaning.

generating the electricity to fire the engine, driven by means of pinions or a chain at half the speed of the engine.

Valve Timing.

Which is the correct way to time a 3½ h.p. engine with automatic inlet valve? Should the exhaust valve open at the bottom of the firing stroke and close at the top of the exhaust stroke, or should it open just before the bottom of firing stroke and close just before the top of exhaust stroke? Please also state amount of lift of exhaust valve. When the engine is running at full speed the cam opens the exhaust valve at the bottom of the stroke and closes at top. Is this correct?—B.W.

Time the exhaust valve so that it is dead on its seat at the completion of the exhaust stroke. It should begin to open when the piston is within one-tenth of the end of the firing stroke. The lift of the exhaust valve depends largely on the diameter of the valve head, and the shape of the cams. If your valves are of the usual size ¼in. lift is approximately correct, but it is impossible to tell you accurately owing to many other considerations in connection with your engine which you have not mentioned.

Timing the Magneto.

Kindly inform me how to set the chain wheel on the magneto spindle from motor cycle engine so that the spark is timed correctly? Also what should be the position of the spark advance lever with the engine at rest?—C.H.P.

To time the magneto, retard the spark and set the points just about to break when the piston is dead on the top of the compression stroke, then fix the sprocket on the armature-shaft. This will give approximately the correct position, but whether it is the best timing for your particular engine can only be proved by the results obtained. Spark timing is, to some extent, governed by valve timing, and it is merely a question of trial and error.

A Peculiar Engine Knock.

My 3½ h.p. 1908 Triumph has recently developed a peculiar knock. I find that after giving it two or more pumpsful of oil a mechanical knock occurs which continues for a distance of 200 or 300 yards when it suddenly ceases. The bearings are all in good order, and the cylinder clean. I have recently fitted new piston rings and a new gudgeon pin. I use a plentiful amount of oil, just enough not to smoke. I shall be glad if you will suggest a cause for this knock and a means of preventing it.—G.A.

The knock is probably due to pre-ignition, caused by carbonisation of oil. Try giving one pumpful at a time; two charges at one injection may be causing too much fluid friction. We do not think that the knock is anything at all serious, if as you say all the bearings are in good order.

Belt-driven.

Chain-driven.

Speed of 4 h.p. Runabout.

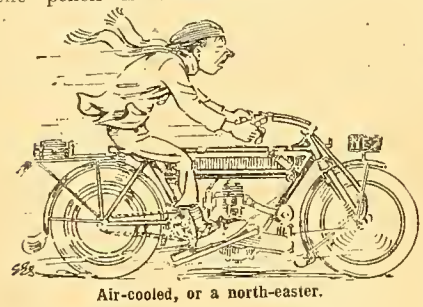
Could you please give me an idea as regards the pace of the 4 h.p. Morgan runabout, gear 5-1, rider 9 stones, level road, no wind? I just want a rough idea.—E.L.

We should imagine that the machine in question would attain a speed of from 30 to 35 miles an hour with a 5 to 1 gear.

Magneto Suddenly Ceases Sparking.

I should be obliged if you would advise me what has gone wrong with my 1909 Bosch magneto. When out riding the magneto suddenly ceased to fire, or rather spark, and no effort on my part would induce it to do so. I cleansed the contact breaker and trimmed up the points without avail, and shall be glad to know what you think.—P.F.

The only part you appear to have omitted to look at is the high tension carbon brush. If you unscrew the high tension terminal you will be able to remove the brush or carbon pencil and see if it is sound and moving freely. It may be sticking. If the pencil is cracked or broken a



Air-cooled, or a north-easter.

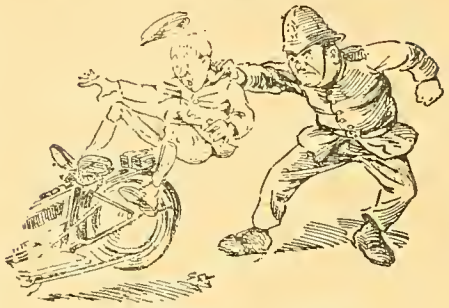
new one will be necessary. It is better not to remove the armature, but if you examine every visible connection and find that these are, to all outward appearances, sound, you had better send the magneto to the makers. If, as we suspect, you find the high tension carbon brush broken, remove all broken parts, insert a piece of rag soaked in petrol, and with it wipe the collector ring, turning round the armature by hand; then fit the new brush.

Lack of Power.

Please give me your valuable opinion regarding my 3½ h.p. 1908 model single-cylinder Brown. It has accumulator ignition, with plain coil and Longuemare carburetter. It does not develop its full h.p., and does not do any more than 15 m.p.h. on the level. The compression is good. At times the carburetter floods and wastes petrol, and at other times does not give trouble in this way, although the carburetter has not been interfered with. It has an 11 jet and a 23 choke tube. How can I get more power, and would the fitted of a 1911 pattern B. and B. or other good make of carburetter help?—C.D.P.

Some adjustment is sadly at fault if 15 m.p.h. is the maximum with the

MOTOR CYCLE TERMS ILLUSTRATED.



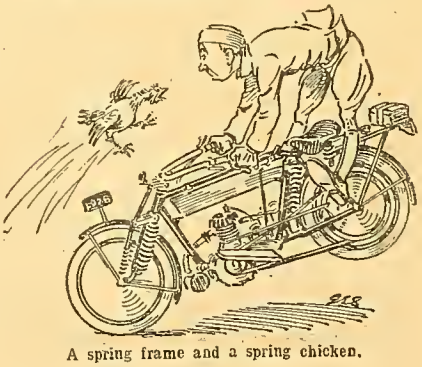
A powerful clutch and a free engine.

engine firing regularly. First of all, look to the adjustment of the contact-breaker, make sure the platinum points are clean and flat and touching lightly; secondly, take off the cylinder, scrape the cylinder head and piston, examine the valves and grind them in if they are at all pitted, fit new valve springs if necessary, take down the carburetter, thoroughly clean the passages, as also the feed pipe, and reassemble. The machine should then give satisfaction. You will get better results by fitting a magneto than by fitting a new carburetter, though with both these improvements the machine should run very much better than before.

Tuning up a Four-cylinder.

I have bought second-hand a four-cylinder F.N. which is about three years old. Please tell me the weight necessary to open the inlet valves, also the proper way to time the magneto? It will not run slowly on the stand, and if I advance or retard the spark the engine stops. It is hard to start on the stand, but when it gets hot runs regularly without misfiring, but with no power. Compression is good in each cylinder, and the exhaust valve shuts dead on top of stroke. Would you advise new carburetter?—HORSE-POWER.

The inlet valve should open ¼in. under a 14 oz. weight. To time the magneto, advance the spark and set the platinum points to separate when the piston is ¼in. from the top of the compression stroke. After you have got the engine to run fairly well with the old carburetter it would be a good plan to order a new one, which is a great improvement on former designs, and will enable the engine to run slowly.



A spring frame and a spring chicken.

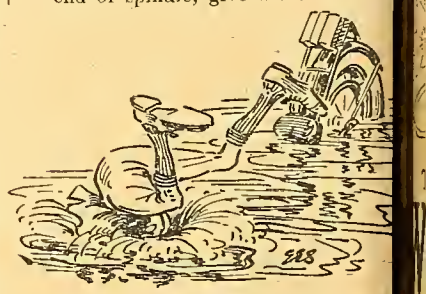
Registration and Description of Machine.

Must I re-register m machine? I registered my o one as a 3½ h.p. Chate M.M.C., but now I have fitte a new engine (twin Peugeo Would it be sufficient for me to i form the authorities of this?—R.B.

You need not re-register. All y have to do is to inform the authoriti that you have fitted a new engine, a the machine should now be describ as a Chater-Peugeot.

Armature Spindles.

I am interested just now the construction of magnet and on reading about them "Motor Cycles and How Manage Them," I notice th the spindle does not run rig through the armature, but is screw into brass end plates. If the arm ture were mounted on a spin running right through, would t affect the current produced by terfering with the "lamination" the armature core? That is to s would an armature having spin right through, with ends of coil c nected to insulated bushes at e end of spindle, give the same curr



Water-cooled.

as an armature having the spi screwed into end plates?—T.D.

The interrupted armature spindle constructed to allow the maxim amount of wiring, and to facilitate construction. If the spindle w continuous, the current produced wo be impaired, but not to any appr able extent. Still, the same cur would not be obtainable.

EXPERIENCES WANTED.

Readers desirous of obtaining the experie of others with various motor cycles or access must enclose a stamped addressed envelop which the replies may be forwarded. Ans to the queries below should be addressed The Editor.

"Lieut. E.S.G." (Harwich). T.A.C.

"H.N.S." (South Hampstead). F.N. four-cylinder.

"E.D." (Reading). "Atlas" p ture-proof inner case.

"Zimmy" (Johannesburg). 3½ Zenith-Gradua and sidecar. Do wear unduly?

"C.H.D." (Bristol). Reliab and hill-climbing powers of 2½ New Hudson (three-speed gear).

"Speedman" (Essex). 3½-4 Bat-Jap used solo and with sid especially as regards general ability and speed as a solo machi

THE MOTOR CYCLE

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

This Year's T.T. Regulations.

We are enabled to publish this week a summary of the regulations for the two International Tourist Trophy Races to be held on June 30th and July 3rd on the "Four-inch" Course, which embraces Snaefell in the Isle of Man. ere are no drastic alterations in the regulations pared with those of last year, but the few itions and changes are important. The vexed stion of silencers, which caused a good deal of ment in previous years, has been settled very sfactorily to our mind. This year competitors dispense with them altogether, but where not d the exhaust must be led from the engine to a nt level with the back axle, and the pipes must not perforated in any way. No one will object to this. ong exhaust pipe extended to the rear has been ed to be quite as effective in silencing the aust as some liberally drilled exhaust boxes. A auption has been adopted by making a rule render- it compulsory to fit silencers during practising.

n up-to-date rule is that if auxiliary exhaust ports used they must be so arranged that the discharge es into the silencer or exhaust pipe, and no other et for exhaust gases will be permitted.

he rules regarding tyres have been slightly lified, as difficulty was experienced in the past with rd to the sizes of tyres fitted to some of the hines. The new rule, while permitting the makers' dard, allows some latitude for tyres which are tly deeper than they are wide. This has been ided for by defining the horizontal sections as well he makers' standard.

his year there will be no weights taken of com- ors' machines, and the somewhat farcical brake tests, which have been criticised in these columns, will be dispensed with. Competitors in their own interests will use powerful brakes.

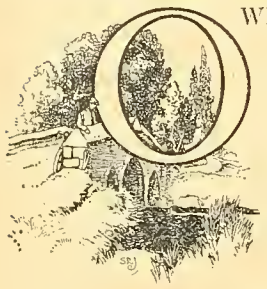
One rather important innovation refers to examination after the race. It amounts to this. If a machine is found to be devoid of any material equipment with which it started the race, it shall be liable to disqualification.

The Open Road.

What glorious vistas are conjured up by these three words. From earliest days the love of travel has held the British race in its strong grip, and what could be more entrancing than a journey on the open road. Few motor cyclists can forget their first rides in early spring, when the kindly sunshine is releasing the roads from their winter coating of mud. Given reasonably fine weather conditions the wheels glide over the unresisting surface, the corners which required the utmost care to get round safely when slippery with winter grease are now taken without a flicker, and full enjoyment is realised after months of plugging. The road riding motor cyclist is as much a potentate as an American railway magnate who has his own private car attached to any train running anywhere in the country. Has not the motor cyclist got his own private vehicle on which he can go where he pleases? He is even more independent because he can travel where he lists without the annoyance of being confined to any particular route. This is the season when those to whom the joys of the open road have yet to be unfolded should make up their minds to taste its pleasures, and they cannot find a more exhilarating or better means of doing so than from the saddle of a motor cycle.

The Problem of Timing Speed Events.

TWOPENCE PER WORD OFFERED AS A PRIZE FOR THE BEST SOLUTION.



OWING to the diversity of opinion and the numerous methods in vogue of timing speed competitions, the Northern League has decided to offer a prize of £1 1s. for the best suggestion, new or old, for surmounting the difficulties and objections raised by the present system. It is a well-known fact that many gross errors have occurred in hand timing, nor can the possibility of error be eliminated with this system. When one considers that only fifths of seconds separate the leaders, it will be realised how easily the wrong man may be placed first.

Considering the more common methods of timing adopted, we find that synchronised watches are very handy, but unless the watches are really synchronised and worked by expert hands a great many mistakes arise. Again, the cost of obtaining such watches is very great, and also to be perfectly accurate the watches should be compared at intervals during the competition.

Timing by a Single Watch.

To time by means of a single watch at one end of the course and a flag at the other is good, but requires two very sharp and competent operators, and this system necessitates the holder of the watch being in such a position as to be able to see the flag with an absolutely uninterrupted view; this is practically impossible for hill-climbs except over short stretches. A long hill situated like Sutton Bank would allow of this, but the distance is so great that mistakes and variatio would be bound to occur.

For and Against Electrical Timing.

Electrical timing, if worked correctly, is probab the most accurate and has most to recommend it, b outstanding objections are: (1) Cost of apparatus; (trouble and time taken up in carting the wire, acc mulators, etc., to the hill; and also (3) the laying the wire. Further, if the weather happens to be we the accumulators seem to have a nasty habit of runni down very quickly, and should the course be a lo one it seems necessary to have a big voltage handy.

This criticism is not intended to enumerate all t advantages and disadvantages of the various means timing, but rather to give an idea of the difficulties be surmounted.

Rules.

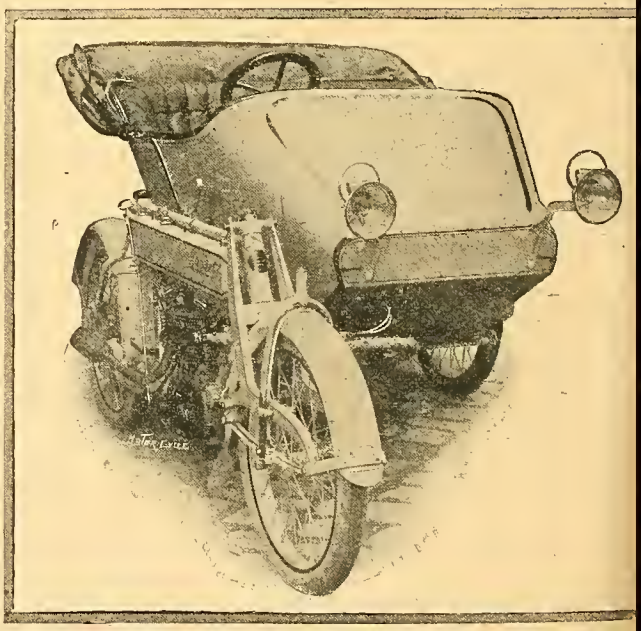
Short pithy replies should be sent to the Editor this journal, and should be accompanied by sketch or photographs where necessary. Articles should n exceed 250 words, and must be in our hands befo the end of April.

The only rules are that the Editor's decision shall final; and that all literary contributions sent in sha become the property of the Northern League. T Editor reserves the right to publish replies other tha the winners', if deemed sufficiently interesting, and such a case payment would be made at the usual rat

"The Motor Cycle" will present an additional prize of £1 to the writer of the winning article.

A TWO-SEATED SIDECAR.

A GERMAN passenger motor cycle which follows closely on the lines of the Davis Double is the Magnet. The body, it will be noticed, is torpedo-shaped, and has a side door. The coach-built seat, which accommodates two persons, possesses a collapsable hood. A distinctive feature of this design is the two-track system, which minimises vibration as well as the risk of puncture. The method of supporting the forepart of the machine is rendered clear in the photograph; a stout tubular arm proceeding from underneath the central section of the body is bent towards the bicycle frame and attached to the down tube. The body is suspended on laminated springs. The specially designed steering fork will be observed, also the laminated springs controlling the movement of the front wheel. A vertical safety fork is also fitted, its members passing through slots on the longer arm extensions of the steering fork and ensuring a vertical rise and fall of the front wheel. The steering is controlled by a wheel and the two steel cables shown. The air-cooled single-cylinder engine, which develops about 5 h.p., is ignited by low-tension magneto—a system much favoured by Teuton manufacturers—and drives by chain through a change-speed gear box. The mudguarding is very effectively carried out.



The Magnet, a German type of sociable sidecar, with scuttle dash and hood.

IN SEARCH OF STEEP HILLS.

EARLY last week a party of members of the Westmorland M.C.C. arranged to go a short hill-climbing tour, and had hoped to be accompanied by several members of the Southport M.C.C., but only two took part, one on an 8 h.p. Bat, the other on a 1911 T.T. Triumph. Of other machines there were Bradburys, one Zenith-Gradua, Rudge, two-stroke Rex, several Triumphs, and Braithwaites (a local make). Sixteen in all took part in this climbing expedition. The meet was at Levens Bridge at 11.30 a.m., and from there to Towtop Hill, about two miles from Lindale in Cartmel, a hill never before climbed by motor cycles, which is not surprising considering the surface—mostly loose cobbles, very bad at the start, and several very bad turns, of which the photographs will give some idea. The rise itself is about one mile long. At the first attempt only three succeeded in reaching the top, but after another try the following made successful climbs: J. Pennington (1909 Triumph), G. W. Braithwaite (3½ h.p Zenith-Gradua), H. Harrison (3½ h.p. Rudge), Capt. Gregson (8 h.p. Bat), and H. Braithwaite (3½ h.p. Braithwaite). Two of the aforementioned who have climbed Honister consider this hill more difficult to surmount successfully.

From Towtop the party rode to Ambleside for lunch, and then on to Red Bank, Grasmere, for the next climb. Red Bank is reputed to have a steepest gradient of 1 in 3½. The following riders made good, clean ascents: G. W. Braithwaite (Zenith), H. Harrison (Rudge), W. Westwood (1911 T.T. Triumph), J. and H. Braithwaite (Braithwaites), L. Pennington (1909 Triumph), Capt. Gregson (8 h.p. Bat), several others making very good climbs to within twenty or thirty yards from the top. From here the party returned to Ambleside to make an attempt on Kirkstone Pass, starting in Ambleside, which, as most tourists know, is rather a tough proposition. At any rate, it was conquered by a Zenith, Rudge, two Braithwaites, 8 h.p. Bat, and a 3½ h.p. J.A.P. The outing was much enjoyed.

Our informant—Mr. Gilbert T. Hogg—concludes: "We can find hills about our district equal to any in the country, and also riders to conquer them."

It will be noticed that no mention is made of the gear ratios of the single-geared machines, but the trials prove unmistakably the scope of the modern motor cycle with an adjustable pulley. Hills of the severity of Towtop and Red Bank may not be encountered in a year's touring.

CLIMBING TOWTOP HILL, a gradient equal in severity to the steepest parts of Kirkstone Pass.

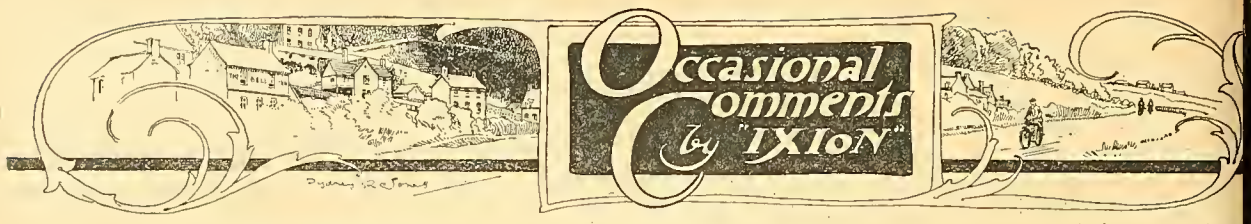
(1.) A Bradbury at one of the early bends.

(2.) H. Braithwaite descending after breaking a belt. He was successful at the next attempt.

(3). View from the starting point.

(4.) Showing the twisty nature of the hill, and the fine panoramic view.

(5.) A Rudge at the third corner. Note the stony surface.



Road Obstructions.

It is very curious that so many complaints should be heard of obstructions on the Yarm-Thirsk road, for on three separate occasions I have had similar experiences in the very same place. I particularly remember dimly sighting some black objects in the dusk of a September evening, and on declutching my tricar I found they consisted of three large farm buckets full of water. Not a soul or a house was in sight, and after thoughtfully replenishing my radiator, I emptied out the surplus water, took the buckets three miles, and hid them in a ditch, as a warning to all concerned. Motor cyclists should observe great care in traversing many of the small villages on twisty by-roads up North. It is quite a common occurrence to round a corner and find a doll's tea party in full progress, with a set of broken crockery disposed on a small "cracket" or wooden stool in the very middle of the highway. The children's indecision resembles that of the novice at punting, who is never quite sure whether he will "go on with the punt or remain with the pole," and kidslaughter is entirely probable if we are unwary.

This Year's Prospects.

There is a good time coming. Competition riders are sure of the most exciting season on record. The crack machines are becoming levelled up—there is always room at the top, and certain firms have realised the fact, and are scrambling up hand over hand. Moreover, as the number of riders increases, the select band who can coax the last pennyweight of kick out of their engines and snatch every inch in steering and jockeyship is swelling in size. No individual rider or machine can look forward to a walk over in any open event demanding more than mere monotonous reliability. The only people to be pitied are the trials secretaries of provincial clubs. I know their familiar dilemma; if they run their trials on a basis of mere reliability, it takes them all the season to find a winner; if they import some tests of skill, the unskilful members too often want their entry fees back.

The "joy rider"—using the term without its opprobrious Yankee implication—may also count with some confidence on fine weather; we have had rather a run of mouldy summers lately, and surely in Coronation year the sun will shine all day, kindly showers at midnight will lay the dust neatly for twenty-four hours ahead, and Robert—with his Coronation dinner tucked snugly away just beneath where his heart ought to be—will forget to press the little Ananias trigger of his cheap German stop watch. But forgive me, brethren of the road, if I seem a spoil-sport in one particular. I should heartily like to see a real wet week for the A.C.U. Six Days. They are not going to be a picnic in any case—was not our description of the route plentifully sprinkled with the odious little figures "1 in 4" and "1 in 5"? The worse the weather that week, the clearer indicati we shall get of the actual hill-climbing merits a demerits of our 1911 machines. In past years, t many weak machines have emerged from these tri with meretricious reputations.

Long Distance Road Records.

The A.C.U. announces it is willing to auth ticate attempts upon long distance road records presumably if the legal limit is not exceeded. imagine there will be no frantic crowd of aspira besieging the doors of the new club premises. For thing, I cannot remember any existing road rec which can be broken without exceeding the speed lim or is likely to be broken under such a proviso. any rider wants to beat A. E. Catt's ride, and co 2,000 miles in six days, he can obviously do so un the A.C.U. auspices by riding for 100 hours, which seventeen hours a day, approximately, leaving se hours for meals, sleep, adjustments, replenishme etc. Either Mr. Catt's record will be left unassail or the onslaught will not be made under the ægis the A.C.U.

We have heard a great deal about projected "co rides," totting up to I forget how many thousand mi Along the cliff tracks included in a faithful follow of all the indentations in the coastline, I can w believe that twenty miles an hour is quite an ambiti pace; but what fee is the A.C.U. going to charg A not too busy timekeeper will perform such a job a friend at quite low rates—I have heard of a gui a week and hotel expenses; but fees soar like rock when a public body is the employer, and it would be far beneath the dignity of the A.C.U. to "sweat" a ti keeper, as it would be beyond the pocket of the avera amateur to pay standard timekeeping and check fees for a month's ride.

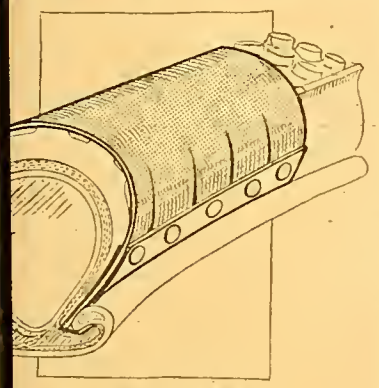
Altogether I fancy the latest A.C.U. promulgation a mere pious pronouncement of no great practi value. Record attempts may cease, or they may c tinue; if the latter, the A.C.U. will scarcely be th sponsor. Perhaps the announcement only referred the establishment of *new* records where the aver legal limit is not exceeded?

Continental Holidays.

A correspondent asks me to invite motor cycli who are planning continental trips this summer publish dates, routes, and probable expenses in c columns. The old country is becoming a little stale the veteran rider, who has toured all our main ro several times over, yet there is a certain disinclinati to venture abroad amongst those who do not kn the ropes of customs, steamships, foreign hotels, e My correspondent would like to visit the Pyrene combining walking with riding, but is reluctant to alone or act as leader of a party, seeing that he h yet to make his first crossing of the Channel.

A Tyre Gaiter.

and Co., 69, Leather Lane, n, E.C., have submitted to us a of the "Ideal" tyre gaiter, they claim can be fitted in less minute. This gaiter has been o dispense with the usual laces,



The "Ideal" tyre gaiter.

are liable either to break or Metal bands are fitted along es, and the method of fitting is te the tyre, place the gaiter over naged part, and press the metal nder the rim until it occupies the illustrated.

haust Whistle and Clothing.

n which very carefully considers nts of motor cyclists is that of Messrs. Alfred Dunhill, Ltd., Euston Road, N.W. The Dunhill exhaust whistle is one of the best of its kind; it is made entirely of brass, and has a good tone. The latest model is now provided with a clip, which does away with the necessity of drilling right through both sides of the exhaust pipe, as it is only necessary to nick out a small portion.

s new Poncho r cycle coat.

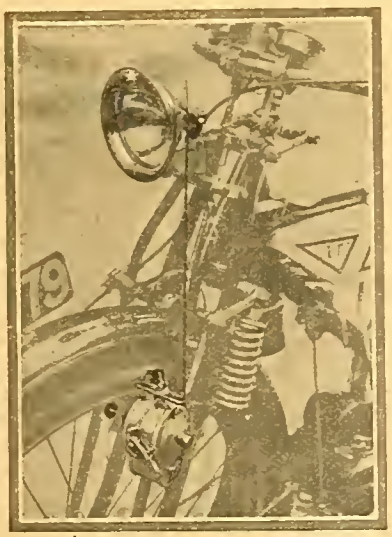
g the supply of articles which hown to us on a recent occasion, hich appealed to us most was a yclist's waterproof suit, consisting eve poncho cape and leg overalls. mer is provided with a gusset at k, and is fastened by means of a hook and eye and a glove fastener. The suit is composed of paramatta, but the gusset is of sheet rubber, from which water runs as from a duck's back, thus absolutely preventing any wet from driving in upon the rider's clothes. Pockets are provided, which are conveniently placed, and wind cuffs are supplied. The accompanying illustration shows the design of the trousers, which completely protect the lower portion of the rider's body from the wet, and he can safely sit upon a damp saddle without feeling any ill effects. It will be noticed that they are split at the side so as to enable them to be slipped on quickly, and they are held in position by a strap round the waist.

Trouser overalls with spring fastenings sold by Dunhills.

Messrs. Dunhill have lately placed on the market an electric lamp with an adjustable bulb, enabling the focus to be altered.

A Magneto Electric Lamp.

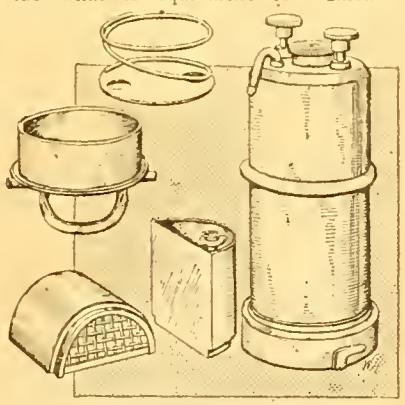
The "Voltalite" magneto electric motor cycle lamp is sold by the Service Co., Ltd., 292, Holborn, W.C., for attachment to the front wheel of a motor bicycle. It consists of a small dynamo in a waterproof case, and is driven by means of a friction wheel off the front wheel of the motor bicycle. It is claimed that it will show a light while the machine is being pushed along at three miles an hour, while the dynamo winding is of such a nature that it cannot burn out, no matter at what speed the machine runs.



Service Co.'s "Voltalite" lamp.

A Double Grid Generator.

A good acetylene generator is an article which is coveted by every motor cyclist who rides much at night. The F.R.S. double grid generator No. 2 D has two carbide chambers quite distinct one from the other and with separate water valves. Our readers will remember that "Ixion" mentioned a few weeks ago that he always preferred to carry two small generators instead of one large one, and it is most enterprising on the part of the makers, Messrs. S. Hall and Sons, 18-20, Swinton Row, Edinburgh, to provide what is equivalent to "Ixion's"



F.R.S. double generator, showing separate carbide receptacles.

idea, only contained in one vessel. It is claimed that each generator will burn for three hours, and as the carbide holders are made in half circles, which fit into the common dust chamber, one half can be used or charged without disturbing its neighbour.

Another article just introduced is a generator made to compete against foreign productions. This generator is quite on ordinary lines, but it is rather heavier and stronger made than the average generator, and yet is sold at no higher figure. We have one of these generators in use, and hope to give our opinion of it in an early issue.

Incidentally we may mention that the latest introduction on the large F.R.S. lamp is a 5½in. lens.

WHAT IS A LIGHTWEIGHT?

THE recent extension of motor cycle design in several directions has not unnaturally resulted in certain grievances. The field of design is broad, and rises by easy stages from the 1¼ h.p., scaling 80 lbs., ready for the road, up to the 8-10 h.p. twin, scaling in extreme instances as much as 3 cwts. Contrariwise the classification employed by the organisers of competitions is arbitrary, and consists of hard and fast lines, drawn ruthlessly in horizontal fashion across the field of design. It is absolutely inevitable that grievances should exist. The promoters of a track race or a timed hill-climb cannot organise separate classes for every weight difference of 10 lbs. between the limits of 80 lbs. and 350 lbs., nor can they have separate classes for every variation of cylinder capacity between 250 c.c. and 1,000 c.c.

At the same time it by no means follows that at this early stage we have arrived at the best compromise. I think several existing grievances are unpardonable and remediable. There is a certain amount of chaos. Existing machines fall into four or five main classes, the 80 lb. lightweight, the 120 lb. medium-weight, the 3½ h.p., the 5 h.p. twin, and the monster twin. In other words, we have five classes on a graded "buyers' list," or four horizontal lines. But two of these classes are lumped together by the A.C.U., one of the horizontal lines is erased. The medium-weight and the lightweight are lumped together by the A.C.U.—or to take actual examples, the Motosacoche and the Douglas are ranked as equals. Even in this rather rough and ready classification, the A.C.U. is not consistent. It has officially defined a lightweight as a machine which weighs not more than 110 lbs., and does not exceed a cylinder capacity of 340 c.c. This is for ordinary purposes such as standard hill-climbs. But when we review regulations for the lightweight T.T. we find no wei limit is imposed, and the cylinder capacity the sole canon of distinction. Further, the five-c definition—if universally observed—would press h on such machines as the two-speeded F.N. and Phe Moore, which weigh about 140 lbs.

The excuse for this chaos is not far to seek. If definitions of lightweights and medium-weights narrowed down, classes will not fill; and, therefor hasty enforcement of close definitions would sim squeeze the two types of machine I refer to out of hill-climbing competitions for the time being. practical question resolves itself into this: Can improve on the classification for 1911, or must wait until the number of light machines increases, classes fill better?

Without doubt there will be a vast increase in number of 80-120 lbs. machines on the road this y and I am strongly of opinion that there should separate classes in all important sprint events for 80 lbs. 1¼ h.p. type, and the 120 lbs. 2¾ h.p. ty why not a class for 80-100 lbs. in weight with a s able c.c. restriction, and a second-class for 100- lbs. with a somewhat enlarged c.c. limit? S riders may think the 140 lbs. variably geared type, s as the F.N., Douglas, and P. and M., ought to catered for. But my personal opinion is that th machines are more correctly termed medium weig while they are not as yet sufficiently numerous to a separate class of their own. Lastly, why is there weight limit for the Isle of Man event, which is o only to lightweights? It would be misnamed to it a "lightweight" race, while cubical capacity al defines the limit.

IXION

A MOTOR CYCLE FOR BREAD DELIVERY.

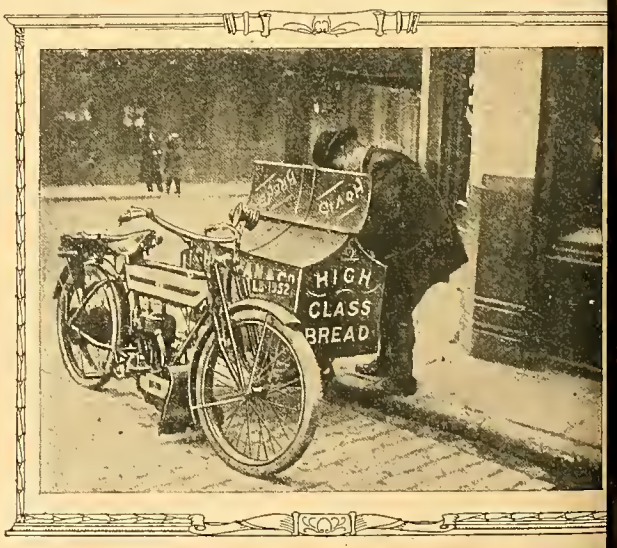
THE accompanying photograph shows Mr. Chapman, baker, of Blackheath Hill, S.E., "loading up" with standard and white bread, flour, etc., preparatory to starting on one of his daily rounds. Over the hilly roads of Blackheath he finds his motor bicycle and sidecar a great advantage over a horse and cart.

He makes claim of being the only baker in London to make use of a motor cycle carrier for delivery; perhaps the claim can extend to the whole of the country.

The machine has been in fairly regular use for over twelve months. It is a standard Triumph, with Roc two-speed gear and free engine. Mr. Chapman's difficulty at first with a single gear was in starting up, but he finds the change-speed gear a great improvement, enabling the machine to be started smoothly and on any hill. The engine is allowed to run whilst serving clients.

The side-carrier box is of Mr. Chapman's own design and make, and carries as much as an ordinary bakers' hand cart. It is fitted to a Mills-Fulford sidecar frame, and easily detached and a chair fitted in its stead for passenger work at week-ends.

Mr. Chapman's experiences are additionally interesting, insomuch that he tells us the Triumph is his first motor cycle, and that he never previously had any experience of driving. As an old pedal tricyc however, he naturally experienced no difficulty steering with the side-carrier.



A Triumph motor bicycle and sidecar used by a Blackheath baker for busine purposes

LEADING MOTOR CYCLE CLUBS

James St. John, captain.

Frank Burnett, hon. treas.

No. II.—THE SUTTON COLDFIELD A.C.

HE history of this club dates back only three years, but in that short period it has done great things. It was in the year 1908 that a ng of local motorists was called to er the advisability of forming an obile Club for Sutton Coldfield, objects of which should be the rance of the pastime by promoting titions and generally looking after terests of motorists in the district," d down in Rule 2.

first officers of the club were: ent, Mr. J. C. Shannon; captain, Seymour Smith; vice-captain, Mr. . Jones; chairman, Mr. F. H. y; and the hon. sec., Mr. Howard ne.

Lane remained hon. sec. of the ntil April, 1910, when business took o Canada. He left carrying with he warmest regards and best wishes members.

Rapid Growth.

ing its first two years the club ership rapidly grew, and the scope activities proportionately widened. club, together with the Birmingand Worcester organisations, was y instrumental in inducing the Auto Union to select the route of its erly Trials in different centres all the country instead of continuously London district, thus encouraging ntry of riders from all parts of nd in these competitions.

ing 1910 some first-class competiwere held, and ample proof of the ent *camaraderie* of all members is by the forty-three entries received e mile speed trials held in June, and to members only.

ward Smith, present hon. sec., who will be n to many of our readers as a frequent and successful competitor in open competitions.

In *The Motor Cycle* Challenge Cup competition the club competed against eighteen of the principal clubs in the country, and was successful in securing third place with 598 marks out of a possible 600.

In the International Tourist Trophy Race members again upheld the honour of the club, three of them finishing thirteenth, sixteenth, and twenty-sixth respectively. Members have between them won in competitions all over the country a dozen or more silver cups and considerably over 100 medals, more than fifty of which are gold, representing in most cases first prizes.

The Social Side.

In the early part of last year the annual dinner was well attended, and lectures are now usually attended by audiences of 200 or more.

A good programme has been arranged for the present spring, which includes several lectures of a technical nature and also limelight lectures on tours and club competitions during the past year.

The club's legal department is very active, and on different occasions members have been notified by circular of police traps in the district, and also advised of the necessity for careful driving through certain thoroughfares.

A member recently took advantage of the R.A.C. free legal defence scheme which this club offers—on the occasion of a summons at Upton-on-Severn for an offence in connection with the driving of his motor. Through the association of this club with the R.A.C. he had the free services of an eminent Birmingham solicitor, with the result that he was relieved of all expenses.

The club has recently issued a twelve-page booklet giving a report of its doings during the past year, and in addition a report of the successes of some of its members in events all over the country. This has been much appreciated, while prospective members can form their own opinions from it of the club's liveliness and welfare.

With the approach of Easter and the competition season, we shall shortly discontinue this feature for a few months. Secretaries are therefore requested to withhold any more club histories until further notice, but we intend to publish those we have in hand.

A striking feature of the official enterprise and solicitude for the convenience of members are the negotiations, just completed, by which free garage for cars or motor cycles can be obtained at the principal hotel in every town of note in the Midlands.

The Sutton Coldfield A.C. was recently brought into the limelight by organising what was intended to be the first open Midland reliability trial, but the A.C.U. intervened. Nevertheless, the trial proved a great success, forty-six competitors starting.

The Club's Executive.

Before concluding some reference should be made to the present officers of the club. In the president, who is Mayor of Sutton Coldfield, Councillor T. H. Cartwright, one finds a gentleman who is always ready to assist the club in every possible way, and a most sympathetic supporter. In Mr. George É. Urry the club has another valuable worker, who acts as hon. solicitor, and in several instances he has been of very great help to the committee. The hon. treasurer, Mr. Frank Burnett, is possibly one of the oldest motorists in the district.

In Mr. J. St. John, who has only recently taken over the duties of captain, the club has, perhaps, one of its keenest and most popular members.

The general and trials hon. secretary of the club is Mr. Howard Smith, a well known and successful amateur, who is well backed up by the other officers and a most hard-working committee.

Howard R. Lane, the first hon. sec., now in Canada. The photograph was sent to Mr. Howard Smith, and on the back is the wording: "Your humble studying. I do not think you have heard of the book I am reading. Have you?"

A COMBINATION VALVE.

VARIOUS attempts have been made to combine the inlet and exhaust valves by placing one concentric to the other, the claim for such devices being that the incoming cool gas keeps the exhaust valve as cool as is possible. An ingenious arrangement of a combination valve has been sent us by a Goole motor cyclist, such addition being made to the exhaust valve that it partakes of the nature of a slide valve.

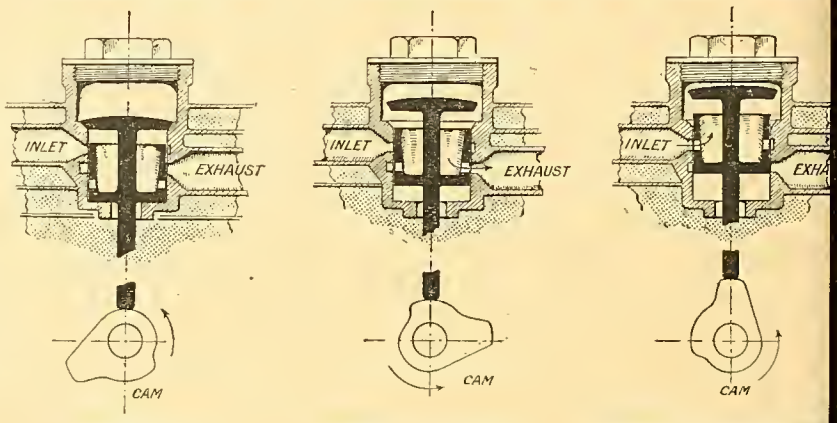
The cylinder has only one valve pocket and seat, two ports being provided in the pocket. The lower port is the exhaust and the top is the inlet, and the pocket is machined smooth inside like the cylinder. The ports are recessed for $\frac{5}{16}$in. right round the inside of the pocket. The valve is of the poppet type, and is provided with a special sleeve on the stem, the sleeve and stem being formed out of a solid piece.

The sleeve has a port for ingress and egress of gases, which extends nearly all round it. It is claimed that, as the sleeve works in the pocket with the same clearance as the stem does in the guide, no lubrication is required. The cam which operates the valve is provided with two steps instead of one, and is mounted on the ordinary two to one gear spindle.

The Action of the Valve.

At the commencement of the exhaust stroke, the lower portion of the cam lifts the valve off its seat, and allows the burnt gases to escape past the valve, down the sleeve, and out of the port into the silencer. At the beginning of the inlet stroke, the higher part of the cam comes under the heel of the valve and l it higher still, until the port in the sleeve is oppo the inlet port. The valve is kept in this position u the piston has completed the inlet stroke, when drops back on to its seat for the compression explosion strokes, this movement being, of cou repeated in succeeding operations.

SHOWING THE ACTION OF A NOVEL COMBINED INLET AND EXHAUST VALVE.

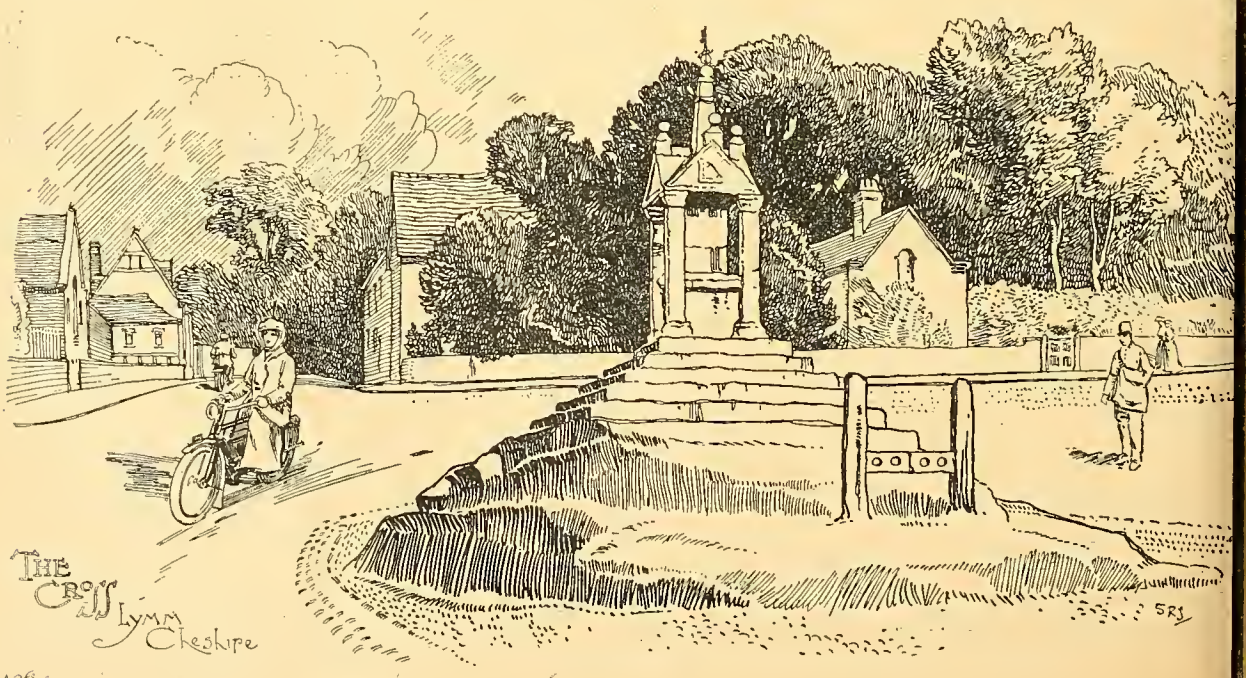


Compression and firing. Both ports closed.

Exhausting. Inlet port closed, exhaust port open.

Induction. Exhaust port closed inlet port open.

The following advantages are claimed for device: Valve cannot be burnt or broken, as it is k cool by the incoming gas; there are about a do fewer parts on a single-cylinder engine; there is valve grinding; and good compression is kept lon and better. The old and well-tried system of pop valve and cams is retained, and starting is easier, the inlet port is only open during the suction str of the piston, and not both inlet and exhaust as in two-valve system, when using the exhaust valve lift



The Editor does not hold himself responsible for the opinions of his correspondents.

Letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

To Preserve Belt Rubber.

92.]—Reading the query of "Anxious" with regard to ing rubber belt reminds me of a tip for preserving given me by a chemist, namely, keep in a dark referably damp place, and about once a month rub over glycerine diluted with rose-water. I have never had n to try this, but this is the way, I am told invalid hions and such like are preserved. Possibly a similar ent might soften the belt in question. EL 168.

The Suggested Motor Cycle Show in the North.

5.]—Your correspondent Mr. C. B. Robinson ex- s my views exactly. When it is considered that the ester Motor Show for the last four or five years has for its support largely from the cycle section—cars barred by the S.M.M.T.—it is rather surprising and ointing not to be able to find one motor cycle in the

us up North hope that before long an exhibition of sections of the motor trade which were left uncatered the parent show, namely, the cycle and marine es, will be organised, if possible, nearer the centre city.

sure it would be a huge success, seeing that motor are making such rapid strides forward.

H. HOLDEN.

Open Frame Motor Bicycles.

.]—As a rider of an open frame motor bicycle the comfort derived from this type of frame seems to me nounced that I have often wondered at the uniform n by makers of the diamond frame as a standard

e seems to be no structural disadvantage, and no valid for makers to have slavishly followed the lines of the in pedal bicycle design. The motor bicycle has little mon with the pedal bicycle, the different conditions ng a much lower seat and longer wheelbase.

several thousand miles on my open frame machine I not willingly revert to the conventional closed type. the convenience in mounting, adaptability of one's g, and absence of danger, there is everything to re- nd it. It is likewise particularly suitable for elderly s. When will it be more extensively adopted?

E. JAMES.

Nitro-glycerine as a Motive Power.

.]—I fear we shall not hear of successful experi- at an early date. It may not be generally known iven an unlimited air supply, 1 lb. of petrol contains ch energy as 5 lbs. of nitro-glycerine. This is so e nitro-glycerine has to carry its own oxygen, as may from its chemical formula ($C_3H_5N_3O_9$) as compared etrol (practically C_7H_8), which gets its oxygen from , 15 lbs. of which are required for every pound of burnt. Moreover, the products of combustion of nitro- he are deleterious to metals, as is obvious from the propensities of nitro powders on rifle barrels. It haps, hardly to the point to mention that the working a modern rifle barrel sums up to about ten seconds, we must remember that in this form of internal tion engine the pistons are very tight fits, and the are used undiluted at enormous temperatures and es, but still such an ephemeral life "gives one to think." Again, even if a cyclist were willing to risk a blow back to his fuel supply through his inlet valve—whatever its type—would the public tolerate his promiscuous distribution?

Against this there is the fact that the earliest successful flying machines were driven by internal combustion engines using explosives as fuel—these machines being, of course, the good old-fashioned rockets—but the thermo-dynamic efficiency obtained was deplorable.

The ideal engine would be a turbine driven by the gases from a steadily-burning jet of liquid petrol forced into a closed combustion chamber along with a superabundance of air. The engine would be controlled by a needle throttle on the petrol pipe, and would consist of pressure chamber, turbine, and air pump. There would be no noise, no silencer, no carburetter, no magneto, no cylinder, no valves, no flywheels, no heavy oil apparatus—nothing but a feather-weight engine and a powerful, steady torque. N.S.M.

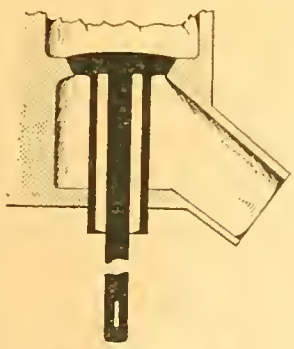
Stability.

[5496.]—With regard to "Elsie's" letter regarding stability, I do not agree with him (or her) when he says the handle-bars are the chief factors for the prevention of skidding. Certainly handle-bars and engine position have something to do with it. A machine with engine well forward and good spring forks is a good preventive from side-slip no matter how the handle-bars are formed. If "Elsie" will widen the handle-bars of the German motor cycle, and then slightly curve in the ends, the "one steady skid" may be cured. Again, comfort counts for a lot in motor cycling, and I think there are many riders who will agree that high handle-bars, such as fitted on the Roc, Matchless, and such machines, are much more comfortable for long distnce riding than the long low ones as fitted on most T.T. models.

SEAL.

Valve Cooling Devices.

[5497.]—Regarding the design for cooling a valve stem, on page 274, March 16th, Mr. Reed has not exactly to my mind quite simplified his device. Enclosed I hand you sketch of an old gas engine valve designed in 1900 by me, and used for a small air-cooled model in brass.



The special exhaust valve described in Mr. Washington Lowe's letter.

This design is simple, small first cost, and has no accessory parts like Mr. Reed's, and is open to the outer air. The sketch hardly shows it to advantage, as the valve is wider in the air spaces than I have shown it. Cone springs fit right over the sleeve and cotter as usual. I had no idea of its use at the time on a motor cycle, and I built it up in three parts instead of casting and putting stem on. If you would insert this letter and sketch perhaps motor cyclists would have casting bored out and this form of valve fitted through the medium of Mr. Reed, who appears to have patented his design. WASHINGTON LOWE.

International Reliability Trials: Belgian Interest in the Suggested Competition.

[5498.]—I am an appreciative reader of *The Motor Cycle*, which is of the greatest interest to our members. Its delivery is awaited every week with pleasure, and the contents read with the greatest interest. The motor cycling season is about to begin in Belgium, and I hope to send you in a few days some particulars of Belgian events, which will, I hope, prove of interest to your readers.

With regard to the projected competition suggested by Messrs. W. Cooper and W. Pratt, I am sorry to see that Mr. Citroen, of the Dutch Motor Cycle Club, does not see his way clear to accept the sporting challenge thrown out, at least for this year. I am certain that it would be of the greatest service to be able to demonstrate in an international competition the value of motor cycles made in different countries. I think it would be advisable, in any case, to find a formula, or create classes, which would allow only the commercial types of machines to take part, as I do not think there are any makers willing to enter racing machines, nor to pay the expenses incurred in connection with races. If the above mentioned challenge is accepted by any Continental club we of the Liège Club shall await the result with interest.

For THE MOTO-CLUB LIEGEOIS,
The President.

[The above is a translation of a letter received from the President of the Moto-Club Liègeois, regarding the recently suggested international competition.—ED.]

Rubber Belts in Australia.

[5499.]—Your valuable paper has done so much good by publishing ideas and suggestions, that we motor cyclists here in Brisbane anxiously await every publication in the hope that someone will explain why we cannot run a rubber belt here like your advertisers claim you do in England

After using them for two or three months they are useless. I ride a Triumph, and cannot make a belt last over four months. I have tried several different makes of rubber belts and cannot get more than 3,000 miles out of them. There is a world renowned firm whose name must not be mentioned out here as after going about 1,000 miles with their belt the rub'er comes right away from the canvas. A friend of mine did happen to get two weeks' wear or about 200 miles out of his, and I may tell you then it was in pieces, and the firms agent's here give you no satisfaction whatever, they blame the pulleys, and tell us our pulleys are the wrong degree. I suppose next it will be the saddle is in the wrong place—should be over the front wheel.

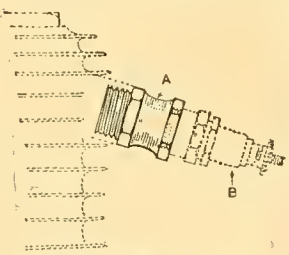
So kindly if you have any pity, as we are worried to distraction, recommend us a good belt. A. WHEELER.

Brisbane.

[The climate certainly affects the life of a belt, but our own experience is that 3,000 miles is a very fair average for a rubber belt on a 3½ h.p. machine.—ED.]

A Remedy for Oily Sparking Plugs.

[5500.]—I can sympathise with your correspondent "Heavy Twin" [5482], as for a long time I suffered from misfiring and often a complete cutting out of the front cylinder of a 5 h.p. twin engine I used in 1908-9. Eventually, after having been put to no end of trouble on the road in the way of cleaning plugs, draining crank case, etc., I completely overcame the bother by fitting a "distance piece," or sparking plug carrier between plug and cylinder as shown in enclosed sketch.



A sparking plug adapter which prevents oil reaching the electrodes.

A is the distance piece, about one inch long, and B is the plug screwed into the distance piece. With this in place I never once experienced any recurrence of the trouble, and, contrary somewhat to my anticipations, the explosions were not in the least affected by the increased distance between sparking points and the combustion chamber. The article is (or was) obtainable from Brown Bros., Ltd. CHAS. S. LAKE.

[5501.]—Replying to your correspondent "Heavy T[w]in" [5482], I may say that I have had very little trouble with my V.S.-Peugeot twin engine in the way your correspondent mentions. I would suggest that the piston rings are not a very good fit in the cylinders, or that the gaps have worked into line. This would allow the oil to work up into the cylinder heads and account for the excessively oily plugs. A pumpful of oil every eight miles is not at all too much for a passenger machine. I used Vacuum B oil with very good results, and on hilly roads (Surrey) I often used a pump every six miles without sooting plugs.

W. O. OLDMA[N]

Magneto Position.

[5502.]—Having seen much correspondence in *The [M]otor Cycle* regarding the position of magnetos, I shall give the experience of mine while riding to Christchurch from [Ha]rewood (Carisbrook, Dunedin).

On my motor cycle the magneto is placed well up behind the cylinder, and the silencer is low down in front of the crank case, where the magneto is on many machines. While riding at a good speed out in the open country (there are no legal speed limits in New Zealand away from towns) I came to a water race with a small foot-bridge over it—quite a common thing out here—with a drop of about 8in. or 9in. on the other side, of which I was ignorant at the time. I struck this drop too late, and the silencer struck the edge of the bridge and crumpled up like paper, although it was of substantial construction. Had the magneto been there, the bill would have been the result, not to mention a walk of about twenty miles to the nearest settlement.

I think that, for this country at any rate, the magneto should be placed high up out of the way of mud and water and clear of kerbstones and the like, as they almost invariably touch the bottom of my silencer, unless I lift the front wheel up while wheeling it across a footpath—not an easy matter with a heavy machine. J.H[.]

Dunedin, N.Z.

Signalling for Motor Cyclists.

[5503.]—There have been for some time past numerous proposals for signals—good, bad, and indifferent. It is in relation to these that I would offer the following suggestions.

In my humble opinion the only signals of any real use on the road are: Stop, Right or Left turn, Come on or Go on (if one wishes another to pass him under any circumstances), and Caution. They must be easily and quickly given and understood or they are useless. In the first place finger signs would be very difficult to distinguish with heavy gloves on or at any distance; and, secondly, when one rider meets another "stopped by the roadside" it is the former who enquires or stops. If he merely shouts or puts out a few of his fingers the dismounted cyclist smiles and replies, "All right," whether it is so or not. Hence, when one meets a friend in trouble it should be one's duty—from a sociable and sporting point of view—to dismount instantly and offer assistance. Therefore, no signals are required.

I have before me a leaflet issued by the Motor Union entitled "Rules and Courtesies of the Road." In it we find: Signals.—When about to alter speed or direction the following indications should be given: (*a*) Stopping or slowing down—the driver's right arm extended horizontally from the shoulder with the forearm held up vertically; (*b*) a turn to the right—his right arm fully extended; (*c*) a turn to the left—his left arm fully extended.

Again, I look up "Field Artillery Training, 1906," and under "Commands and Signals" we have: (1) "Halt"—arm raised at full extent above the head; (2) "Right (or left) take ground"—hand brought to the shoulder and then extended sharply in the required direction two or three times.

Also from "Infantry Training, 1905," under a similar heading we have: (3) "Advance"—arm swung from rear to front below the shoulder; (4) "Extend"—arm at full length above the head and waved a few times slowly from side to side (the hand to be open and to come down as low as the knee on both sides of the body).

Now it can be taken that all these signals were formulated by men in the best position to judge the quickest and most easily understood method of signalling. It is from these, therefore, that I would propose the following: "Stop or slow down"—(1) in F.A.T. substituted for (*a*) by M.U., *i.e.* arm raised at full extent above the head; "Right or left t[urn]

) and (c) by M.U. analogous to but better than (2) in .A.T., *i.e.*, right or left arm fully extended horizontally; Come on or pass on"—(3) in I.T., *i.e.*, arm swung from ar to front below the shoulder; "Caution"—(4) in I.T. ing more easily distinguished from the others than the gnals signifying the same in military manœuvres, *i.e.*, arm full extent over the head and waved a few times from de to side.

I may add that I have used these signals for the past two ars and have always succeeded in conveying my meaning, cept with "Caution," although my follower generally did ow down at the sign. T.E.B.C.

Solidified Petrol.

[5504.]—In these days of dear trol and enhanced running cost, any vention of a device for the reduction the same is sure to be of interest motor cyclists. The other day I had e opportunity of being present at a monstration of the properties of lidified petrol. This substance consists petrol contained in the cells of a lly-like compound of stearic acid and her ingredients combined by a patent ocess.

It is claimed that with solidified trol a better mixture is obtained, e car or cycle can be run thirty per nt. farther per gallon, and the retail ice will be somewhere near 6d. per llon. The carburetter now in use on e two experimental cars now running kes the form of a long rectangular id enclosed in an airtight box stened to the footboard. In the ttom of the box are six pipes con- cted with the exhaust. This is to sist in vaporising the petrol, although 40 h.p. engine can be easily started om cold. The grid is filled with lidified petrol, and the gas is passed the engine through a special throttle id air inlet, the float and jet ambers, and tank, of course, being olished.

On motor cycles the carburetter or id would take the place of the tank, d a motor bicycle now doing sixty iles to the gallon would travel nearly ghty at something like half the cost. lidified petrol is far less explosive than quid, the flame from a large lump being sily blown out.

It can be transported in wooden boxes, us doing away with expensive cans.

Altogether, the Austrian inventor may ok forward to a great future for his in- ntion, as its advantages are many, and s drawbacks, even in its early infancy, em few. CHAS. H. BRADFORD.

P.S.—Unfortunately, I must add the ual disclaimer. I have no commercial terest in the article.

Racing at Brooklands.

[5505.]—I was a keenly interested spectator at the M.C.R.C. race meting at Brooklands on the 18th inst., and as highly satisfied with the sport provided. There are one two points, however, which I think could receive attention ith advantage. The first is that, owing to the shortage of p scorers in the hour races, it was very difficult for the ectators to tell the positions of the men, and at times it as a matter of speculation as to the positions of the first lf-dozen riders. The second is, the embodying of the words Tourist Trophy" in the title of any other race but the tual blue riband event in the Isle of Man does not appeal me, and I should imagine is so framed in order to capture percentage of the kudos appertaining to the words. If this not so, why not call them "One hour races for Tourist rophy types of machines"? ALAN E. WOODMAN.

The Lady Motor Cyclist.

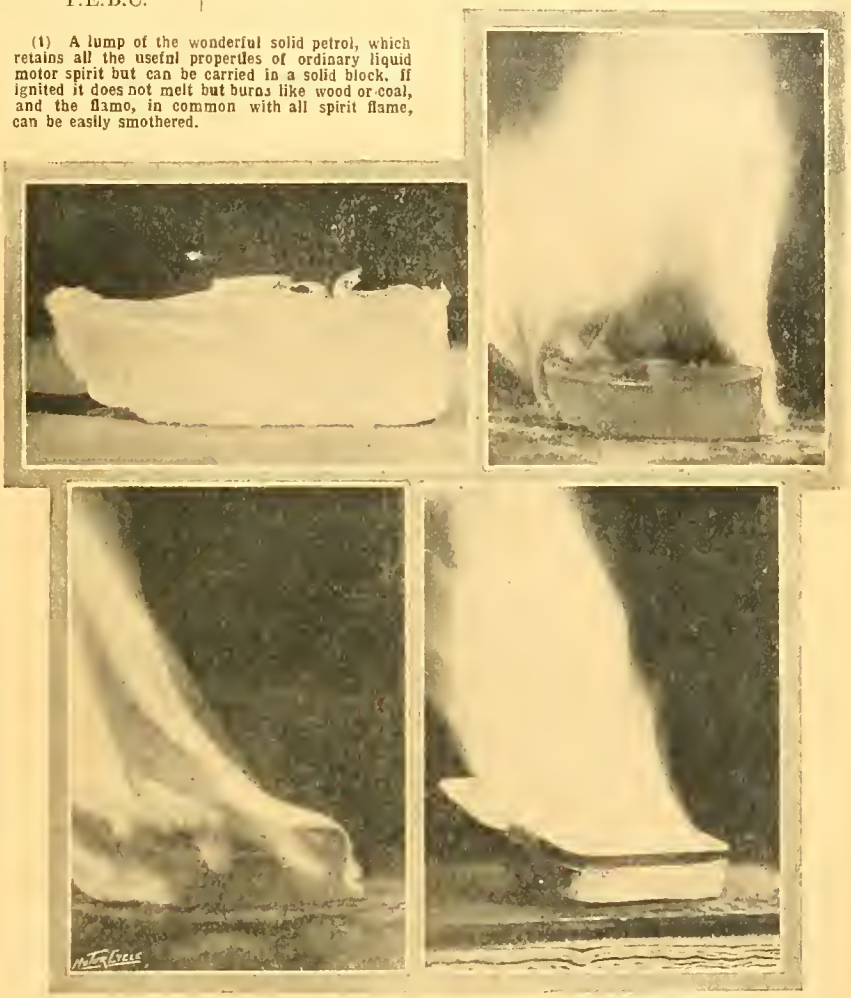
[5506.]—We have read Miss Lottie Berend's article on motor bicycles, and notwithstanding her opinion of what a lady would or would not care to ride, we, as manufacturers, are of the opinion that the lighter the machine is, the more convenient it is to handle.

As regards the power, we think that it would only be the most daring spirits, such as perhaps Miss Berend, who would wish to go at a greater rate than 30 m.p.h., and a lightweight motor cycle which would give this speed is quite able to climb the stiffest hills and provide all the reserve power that is necessary.

It must be, of course, evident to any unprejudiced person that for a lady, especially one living in the outskirts of a town (we speak now of a machine used for utility), the only machine she could do her shopping on, start without any assistance, control in thick traffic, lean against a kerbstone as an ordinary pedal bicycle, and have no marks of oil or grease on her dress after months of riding, is the genuine lightweight, which has been designed solely for a lady, by makers who have specialised in these machines.

Miss Berend surely cannot recommend the heavyweight machine for ladies. Does she not realise what the result would be? They would soon discard their cumbersome heavyweight for an ordinary pedal cycle on their little shopping excursions, etc., thinking all motor bicycles the same.

SOLIDIFIED PETROL.



(1) A lump of the wonderful solid petrol, which retains all the useful properties of ordinary liquid motor spirit but can be carried in a solid block. If ignited it does not melt but burns like wood or coal, and the flame, in common with all spirit flame, can be easily smothered.

(2) Solid petroleum spirit jelly burning with an even flame and without melting, in exactly the same way as wood or coal. Notwithstanding this stability, the solid petrol retains the properties of liquid petrol, being very easy to evaporate, having the same heating power, inflammability, and ready carburetting qualities.

(3) Proof that solid petrol does not melt and run. A piece of the jelly well alight.

(4) Proving that there is no danger of explosion with solid petrol. A box of jelly burning slowly. The new solid petrol is produced by the Solidified Petroleum Co. of Norfolk Street, Strand, and opens up surprising possibilities for motorists.

Fancy ladies riding a machine which they cannot lift on to its stand, which they can barely hold up on an even keel, and, if it fell over, they would be unable to lift it back again. It is too laughable.

No, we assure Miss Berend, the only motor bicycle suitable for a lady is the genuine lightweight, and, without wishing to hurt that lady's feelings in any way, we know that she will eventually come into line, if she has not had a thorough sickening of motor cycles before she has found the uselessness and the danger of heavyweights.

For MOTOSACOCHE, LTD.
OSBORNE L. DE LISSA, Director.

The Quarterly Trials Course.

[5507.]—*Re* your leaderette in the issue of March 9th on 1911 competitions, I hope your remarks on the Spring Quarterly and Six Days' Trial courses will not have the effect of frightening those single-geared "sportsmen" who write to *The Motor Cycle* telling how they climb steep hills at 30 miles per hour on quarter-throttle and so on. Now I live at the bottom of Blue Bank, Sleights, and all my motor cycling is done among the steep hills and on narrow winding roads by which I am surrounded.

I cannot set off for a two miles ride without first having to surmount one or more steep hills, viz., Blue Bank, Ruswarp Bank, or Lythe Bank, and, by the way, I should like to ask "Ixion" why, because I select the type of machine best suited to the kind of roads amongst which I live, viz., a two-speed geared machine, I should be dubbed a potterer.

My humble opinion is that a man who, living amongst such hills and roads, buys and uses a motor cycle is more of a sportsman than he who, living amongst good and level roads, as many of your "sportsman" correspondents do, has every inducement to become a motor cyclist. I am awaiting this year's trials with the greatest interest. I read so much about the wonderful climbing powers of riders of single-geared machines on Southern hills that I am keenly anxious to see how they perform on these Yorkshire hills of ours, and which to me are simply all in the day's work.

E. L. HOLGATE.

Motor Cycling in Temperatures Below Zero.

[5508.]—As a resident in a cold climate (Northern Russia,, I was greatly interested in what your correspondent "Cheer Up" had to say about motor cycling in Canada, and, as "Cheer Up" writes "for the benefit of others," perhaps he will give us some further particulars as to how Canadian motor cyclists manage to prevent their lubricating oil from freezing at a temperature of minus 40° F. (72° of frost!) I have known lubricating oil in a tin freeze solid at a temperature but little below zero F., and one of my first rides on a motor cycle, which had the oil tank behind the petrol tank, came to an untimely end through the oil freezing. though the temperature was well above zero.

We have some pretty hardy motor cyclists here, but not one of them would dream of riding with the thermometer at 40° below zero, as to do so would mean certain frost bite, unless the whole of the face were covered. It is an easy matter to talk lightly of these low temperatures, but no one who has not experienced them can understand what they really mean, and in this country, at all events, if your cor spondent were to venture forth on a motor cycle with t thermometer showing 72° of frost, it would be a case "Cheer up, you'll soon be dead!"

Apart from climatic conditions, riding here would practically impossible during the winter, as in town the sn is soon ground into a fine, sand-like powder, which cov the streets and deep, while in the country the action of t horses' hoofs makes deep ridges, resembling railway sleep in the sledge roads, and no motor cycle, however well sprun could tackle these. But perhaps they manage these thi better in Canada.

D. DICKINSON
St. Petersburg.

Causes of Excessive Grit in Cylinders.

[5509.]—I noticed in your columns recently a letter "A Dastardly Action" from Mr. C. Wightman. I am rat interested, as it suggests to me similar occurrences in my o case. For instance, after carefully cleaning out the cra case of my 1909 machine I did a matter of 250 miles on du roads. After this I had the cylinder off to discover fu $\frac{1}{16}$in. of grit on the baffle plate on the top of the crank ca I had a similar experience later on, and the big end of t engine required rebushing after 3,000 miles. The fault in t case, at any rate, most certainly lay with the engine. was fitted with a hollow crankshaft to act as a release to crank case. It is easy to see that on the up stroke of piston a quantity of dust laden air from the proximity the front wheel rushes in to the crank case. The oil dust there join forces, and the air is again rejected; same thing occurring every revolution. At the end of a hundred miles the interor of the crank case contains a m unsuitable compound for lubrication purposes.

I do not know if the twin Rex is fitted with the bored sh but it is easy to see that if it is the volume of air taken per stroke would be nearly twice as great as on a $3\frac{1}{2}$ h single, and the same applies to Mr. Tessier's machine. both these cases moreover, the riders were in company w several others, which would account for the excessive amo of grit found. I do not suggest that this was the ca in these two cases, but put forward the suggestion, a certainly think it is a point that wants a little ventilati

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SUMMARY OF CORRESPONDENCE.

Will the owners of motor cycles, the registered numb of which are N.H. 233 and A.B. 708, kindly communic with the Editor?

Lycett's Rawido Belt Co., Ltd, write: "It has come our knowledge that some firms are offering an old patt rubber belt as genuine up-to-date Lyso. Will buyers ple note that our present Lyso belt has suction holes at sides, and no other can be considered a genuine Lyso bel

Mr. Robertson Brown writes: "I notice in 'Ixion comments he asks for 'some road-hog reader' to ob with the name of an exhaust whistle that will blow wl the cut-out is open. Although I do not consider myself 'road-hog reader' I can supply him with the desired inf mation. The Rey exhaust whistle as fitted to my Linc Elk fulfils the above requirements."

Meet of memb of the Mersey M.C last Saturda for the first co petition, whi took the form a paperchas

1911 TOURIST TROPHY RACES.

A SUMMARY OF THE REGULATIONS.

The regulations for the two races to be held in the Isle of Man have now been published. Most of the les remain the same as last year, but as there are two distinct events—the Junior and Senior Tourist rophy races—there are of course differences to suit the two types of machine. Below we give the chief les governing the races, and also any important alterations which are likely to affect the preparations now ing made by competitors.

The Junior T.T. Race.

ENGINE DIMENSIONS.—Single-cylinders, 300 c.c.; multi-linders, 340 c.c.

DISTANCE.—150 miles (four circuits).

TYRES AND MUDGUARDS.—Any machine entered must be a uring machine (but without pedalling gear), fitted with o brakes, motor cycle tyres (not less than 2in., maker's ndard, but in any case measuring not less than 1⅞in. rizontal section), metal mudguards (not less than 3½in. er all, and 3in. across the chord), saddle or seat, and tank carry not less than one gallon of petrol.

The Senior T.T. Race.

ENGINE DIMENSIONS.—Single-cylinders, 500 c.c.; twin-cylinders, 585 c.c.

DISTANCE.—187½ miles (five circuits).

TYRES AND MUDGUARDS.—Any machine entered must be a touring machine (but without pedalling gear), fitted with two brakes, motor cycle tyres (not less than 2¼in., maker's standard, but in any case measuring not less than 2⅛in. horizontal section), metal mudguards (not less than 4in. over all, and 3½in. across the chord), saddle or seat, and tank to carry not less than one and a quarter gallon of petrol.

The following particulars apply equally to both events:

AWARDS.—Cash prizes to the first, second, and third riders. lver cups to the first and second private owners, provided ey are not amongst the first three.

COURSE.—The race will take place over a course starting m a point near Douglas, thence to Ballacraine, Kirk ichael, Ballaugh, Sulby, Ramsey, Snaefell, to Quarter idge, a distance of 37 miles 4 furlongs.

Silencers not Compulsory.

SILENCERS.—Silencers are not compulsory. Where not ted, the exhaust must be carried by a pipe or pipes from e engine, extending as far back as the back axle, in such position as not to discharge directly upon the ground. e pipe or pipes must not be perforated in any way. here auxiliary ports are fitted they must be closed in mpletely, and the chamber into which they discharge must d into either the exhaust pipe or silencer, or a separate pe or pipes must be carried to the back axle in a similar nner and under the same conditions as the main exhaust pe. No other outlet for exhaust gases from the cylinder cylinders will be permitted under any circumstances. l joints must be permanent and tight. Any machines ich, in the judges' opinion, are not efficient in this respect, l be disqualified if the fault be not rectified.

DEPOTS.—Two depots will be established at certain parts the course, and only at these depots may the rider have istance. Only one attendant may assist in replenishing e machine. No spare parts, as distinct from tyres, petrol, l lubricating oil, other than those actually on the machine the start and carried during the race, shall be recognised used.

ENTRIES.—Entries for 1911 at ordinary fees will be received the Union, at Pall Mall, London, S.W., up to Saturday, ne 3rd. After that date entries will be received at double s up to Saturday, June 10th. For the 1911 races the chines will be started in order of receipt of entry. The s for 1911 have been fixed as follows: Manufacturers or nts, ten guineas per machine; private owners, seven neas per machine. Late entries will only be received at ible these fees. Unless twenty entries are received no e will be held. The entrance fee will be returned in full no race be held, but will not otherwise be returnable.

No Weighing this Year.

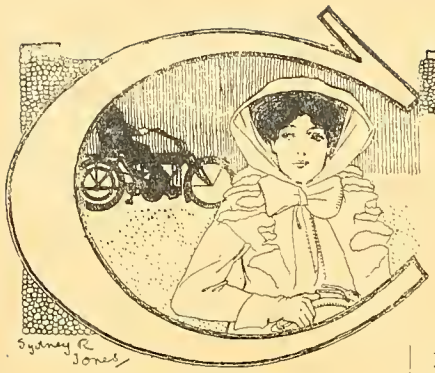
WEIGHING AND EXAMINATION.—Machines will not be ighed. The examination of the machines will take place such manner and at such place and time or times as the ion may decide. Every machine which completes the ole distance of the race shall thereupon be taken to the ion enclosure under supervision to be examined, and if nd to be then void of any material equipment with which started the race, shall be liable to be disqualified.

PRACTISING.—Any machine which is stopped for any cause atsoever must immediately be placed at the left-hand side the road. A rider who has stopped for any cause whatso-r is expressly forbidden to drive or wheel his machine in direction opposite to that in which the race is being run. Should, however, a rider desire personal attention, he may proceed on foot, in the reverse direction of the course, provided he exercises due care not to endanger others.

Regulations to be Stringently Enforced.

(a.) Practising, or even the riding of competing machines anywhere, is forbidden on Sundays. An infringement of this regulation will be followed by the instant disqualification of the machine and driver. *(b.)* Practising over the course will only be allowed from Thursday morning, June 22nd, to Saturday, July 1st inclusive (Friday, June 30th, excepted), and then only at such times as shall subsequently be arranged by the Union, after which no machine entered for the race will be allowed on the course, and no competitor will be allowed to drive on the course or on any part of it on any motor driven machine after that hour on any day, nor at any time on Sundays. Practising will not be allowed on the morning of the race. *(c.)* Competitors must in practice drive round the course, in the direction in which the races are to be run, and a competitor must continue in the same direction until he leaves the course. *(d.)* Although silencers are not compulsory in the actual races they must be fitted throughout the whole of the practising. Any competitor driving a machine without a silencer or with a cut-out, or whose machine makes any noise likely to inconvenience other users of the highway, will render himself liable to disqualication.

The first dropped frame Rex—a design which is now so popular—was introduced in 1906. One of the first of these machines is seen above with O. C. Godfrey in the saddle.



CURRENT CHAT

Time to light Lamps
(Greenwich)

Mar.	30th ...	... 7.28 p.m.
Apr.	1st ...	... 7.32 p.m.
,,	3rd ...	... 7.35 p.m.
,,	5th ...	... 7.38 p.m.

Special Features

THE NEW T.T. REGULATIONS.
IN SEARCH OF STEEP HILLS.
SOLIDIFIED PETROL.
B.A.R.C. OPENING MEETING.

"The Modern Motor Cycle."

Mr. T. W. Loughborough, hon. sec. of the B.M.C.R.C., will read his paper on "The Modern Motor Cycle" on April 6th instead of on the 5th. The lecture will be held in the large hall of the Woolwich Polytechnic.

Speed Trials in the I.O.M.

The Isle of Man kilometre speed trials, which will be held on the Douglas promenade on Tuesday, July 4th, following the Senior Tourist Trophy Race, will be organised by the Auto Cycle Union.

The Start of the T.T. Races.

The start of the Tourist Trophy Races will be from the Alexandra Drive, a point chosen on the occasion of the 1907 car Tourist Trophy Race. The adjoining field will be rented by the Douglas Jubilee Celebrations Committee, who will erect a grand stand and provide accommodation for the A.C.U. and other visitors to see the races. A charge will be made for the seats.

B.M.C.R.C. First 1911 Meeting.

S. T. Tessier's winning Bat-Jap was of 580 c.c., and not 480 c.c. as inadvertently mentioned in one instance last week.

A Stolen Mount.

A 3½ h.p. Rex Speed King finished in French grey was stolen last week from the showrooms of Kirsop, Murray and Co., Ltd., of Newcastle. The frame No. is 20,740.

A Lady's Hill-climbing Feat.

Mrs. G. D. Hardee informs a correspondent that she is endeavouring to obtain a dropped frame machine for the ladies' competition at Easter, and is still hopeful of being able to compete.

Congratulations are due to Mrs. Hardee on being the first of her sex to climb Crown Ash and Cudham hills, she making clean climbs of both hills on Tuesday afternoon last week, on her two-speed P. and M., in the presence of several observers.

Death of Mr. Walter Hewitt.

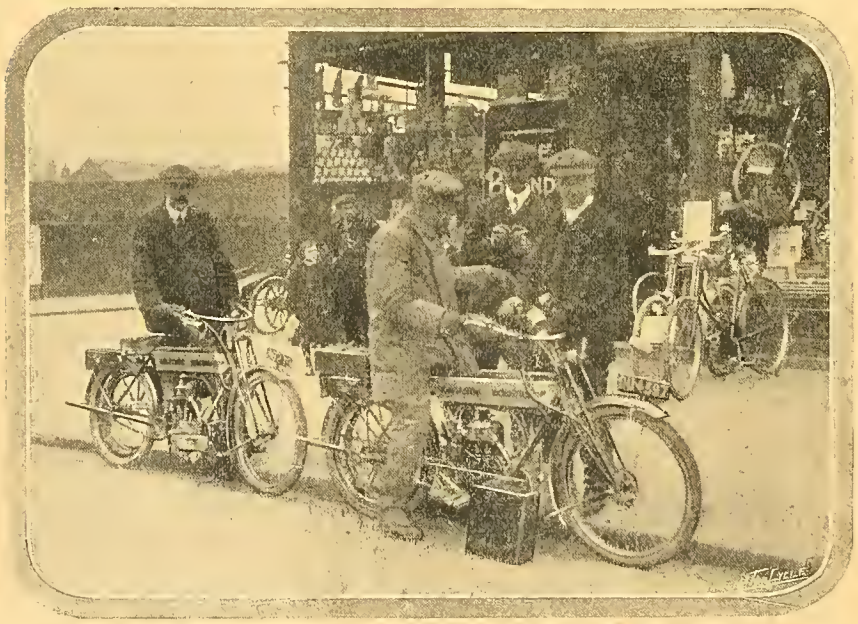
We regret to announce the death of Mr. Walter Hewitt, head of the firm of Bayliss, Thomas and Co., Coventry, the makers of the Excelsio motor cycles. Mr. Hewitt has bee ailing ever since the last show week and passed away on the 22nd inst. H was formerly most closely associate with the late Mr. George Singer and held important positions wit the firm of Singer and Co. practicall from the inception of that busines until 1907. His age was 61.

Death of Mr. E. J. Pennington.

Mr. E. J. Pennington, well-known t many of the pioneers in the motor cycl and motor car industries, died at th Springfield Hospital, U.S.A., on th 5th inst. Pennington was in Coventr in 1896, and was instrumental in th production of a motor cycle type o vehicle which was remarkable fo extremely short runs at very hig speeds. He had instituted legal pro ceedings against the Hendee Manufac turing Co. for $500,000 dollars jus before his death, for alleged infringe ment of his basic motor cycle patent What effect his death will have on th legal aspect of the case is not exactl known, but it was thought even befor his death that the case would b thrown out of court. He was 53 year old, having been born at Moores Hil Ind., in 1858.

The London Clubhouse Scheme.

The committee appointed at th meeting on the 15th inst., to discu the proposed motor cyclists' clu house for London, met on the 22n inst. and passed a resolution that th committee resolves to obtain sub scriptions for the purpose of providin the funds for the formation of limited company. A sub-committe was formed to deal with the matte It was decided that £100 would b sufficient for the purpose, and th committee hopes that those who se in applications for membership wi now add their names to the list of thos who are prepared to subscribe to th formation expenses. The members o the committee, sixteen of whom wer present at the meeting, restricted thei subscriptions to £2 each, as it wa thought desirable to spread the contri butions over as large an area a possible in order to obtain a wide an far reaching support. Contribution should be sent to Mr. H. Gillar Cove, the hon sec., 41, Wellingto Street, Strand, W.C. As soon as th articles of association are ready th members will be called together.



Harry Long, of Southport, taking in petrol at Scarborough last Thursday. On that day, we are told, he completed 6,000 miles since January 1st on a free engine Triumph, in his attempt to set up a year's riding record. Behind Long is J. W. F. Traemer (ex-president of the Northern League) and his new Triumph.

The Timing Problem.

A prize of £2 2s. is offered for the best article with suggestion for timing competitors in hill-climbing competitions and speed events. (See p. 314.)

The A.C.U. London Centre.

With the object of re-organising the London Centre of the A.C.U., a meeting of delegates of the clubs attached to the centre will be held at Pall Mall, S.W., on April 5th.

The London-Land's End Event.

Forty entries had been received for the M.C.C. Jarrott Cup Competition at Easter at the time of going to press. Of these fourteen are two-speed machines, one is a three-speed the remainder single-geared mounts.

The Motor Cycle in the Transvaal.

The West Rand Motor Cycle Club, Johannesburg, held a speed contest on the 5th inst. over a course four miles in length with three nasty bends. The result was that G. Taylor (Bradbury) won from scratch in 4m. 51⅘s. R. Cotter (Triumph), 6⅕s. start, was second. There were fourteen riders in the race, and all had to make a standing start. The competitors were somewhat impeded by a head wind.

British Success in New Zealand.

The Southland Motor Association, Christchurch, N.Z., held an outing early last month, the chief feature of which was a hill-climbing contest on Titipua Hill. Several classes were run for motor cycles and cars, and it is interesting to note that G. B. Brown, a rider of a 3½ h.p. Triumph, made the fastest time of the day, besides gaining first position on formula.

The First Ladies' Competition.

There is still more encouragement for the lady motor cyclist. The Herts County A.C. will give to every lady who starts in the trial a souveuir of the first competition. Another innovation is that any lady may do all or part of the journey at her pleasure. That is, ladies in the Midlands may join the run at any of the four checks *en route* and leave at the same check on the return journey. Of course, they would not be eligible for *The Motor Cycle* Cup.

Two entries have been refused by the organising club from ladies who are riders of men's pattern motor cycles, as the rules would not allow of their acceptance.

Secret Hills and Large Entries.

Can it be that "secret venues" for open hill-climbing competitions are favoured? The Oxford M.C.C. entry list would serve to prove that it is so, and it may be recalled that the Coventry and Warwickshire M.C. inaugurated the "secret hill" system, and held the record for the largest number of entries. The Oxford M.C.C. has this week beaten the record for its first open event on April 8th. On Tuesday the entries totalled 125, and late fees were to be accepted up to to-morrow (Friday). The open class has attracted the most entries—thirty—that for standard single-geared touring single-cylinders being supported by twenty-seven.

One Hour or Twenty Laps?

The hour race on the 18th inst. at Brooklands exemplified the difficulty of accurately timing a large number of riders in an hour race. To time the exact distance covered by each rider at the completion of the hour would necessitate a timekeeper for each man, and that timekeeper would require to be at the exact spot where the rider completed the sixty minutes. As matters are we understand the distance covered by each, with the exception of the first three, is arrived at by calculation. For instance, if the fourth rider passed the timekeepers with exactly one minute to go, and was travelling at the rate of sixty miles an hour, he would be credited with one mile, but there is nothing to prove that he was not travelling slower or faster after he passed the timekeepers. Would it not be better in future long-distance events to define them by the number of laps? Those attempting the hour record could always notify the promoters of the fact, and arrange to be separately timed.

FUTURE EVENTS.

Apr.	1	M.C.C. Opening Run to Brighton.
,,	8	Oxford M.C.C. Open Hill Climb.
,,	14	(Good Friday). Annual Meeting of Northern Motor Cycle Clubs at Richmond, Yorks.
,,	14-17	M.C.C. London-Land's End Trial and Easter Run.
,,	14-17	Herts. County A.C. Inter-club Tour to Harrogate and back, first Ladies' Competition, and Open Hill Climb.
,,	17	Westmorland M.C.C. Open Hill Climb on Shap Fell.
,,	22	A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,,	29	Bristol B. & M.C. Open Hill Climb.
May	6	Herts. County A.C. Open Hill Climb.
,,	27	Herts. County A.C. Open Speed Trials
June	18	M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.

Attempt to set up an Irish Record.

J. Healy, of the Dublin and District M.C.C., who is the son of Mr. T. M. Healy, K.C., well known in Irish political circles, is this week attempting to ride from Dublin to Belfast and back each day, a distance of 205 miles, for the purpose of demonstrating the reliability of the motor cycle. He started on his Rudge-Whitworth last Monday, being timed by officials of the Dublin Club, under whose auspices the ride is being conducted.

Police Traps.

Motor cyclists are warned to drive carefully down Holland Park Avenue, as the police are very active at this spot, especially on Sundays and at night time. Traps are worked at three different places in the Avenue. It may be safely assumed that driving over the legal limit in any main thoroughfare in London is almost sure to result in a prosecution.

Practising on the T.T. Course.

Although official practising in the Isle of Man will be allowed from Thursday morning, June 22nd, we are given to understand that the authorities will raise no objection to practising previous to that date, only competitors must make their own arrangements. Naturally, the Manx residents want the motor cyclists in the island. This announcement is rather strange in view of the A.C.U. circular of last week concerning two motor cyclists who had already been round the course, and it bears rather hardly on the poor amateur and small maker who cannot find the time or funds to indulge in more than a week's practising, though this is not the fault of the A.C.U.

SATURDAY'S BROOKLANDS MEETING. F. W. Barnes (3½ h.p. Zenith) winning the 65 m.p.h. handicap in a hailstorm, with D. C. Bolton (3½ h.p. Triumph) in close attendance.

NORTHERN LEAGUE OF MOTOR CYCLISTS.

The adjourned general meeting of the Northern League was held at the headquarters of the Leeds M.C.C., the Grand Central Hotel, Leeds, on Saturday evening last. Eight clubs were represented, and a very enthusiastic tone prevailed throughout the evening.

The Chairman of the league in his opening remarks tested the feeling of the meeting as to whether the league was to continue its active policy, or, seeing that very much of the good work that the league had set itself to do had been accomplished, whether it should have no active programme this year.

It was unanimously decided by all delegates present that the league should continue to carry out its programme during 1911, and a special appeal is to be made to outstanding clubs to join.

The secretary submitted the balance sheet for the past year which showed a satisfactory surplus in hand to carry forward to next year, this together with the donations and trophies promised (five) ensuring success.

Mr. Tranmer, the 1910 president, wishing to retire, Mr. Rowland Winn, of Leeds, was unanimously elected to this position. Mr. Winn in accepting the position said that he would do all in his power to help forward the league in the future. A hearty vote of thanks was accorded Mr. Tranmer for his past services.

It was decided to offer a prize of £1 1s., announced in another column, for the best suggestion for timing club competitions.

The first event is the Richmond meet and open speed judging trial, followed by the open hill-climb on Easter Monday. Entry forms and full particulars may be obtained from the trials hon. sec., Mr. H. Frain, Snainton. The next meeting will be a general one at the Scarborough club house, on Easter Monday night, by kind invitation of the Scarborough and District M.C.

FIRST OPEN HILL-CLIMB OF 1911.

125 ENTRIES FOR THE OXFORD M.C.C. EVENT ON APRIL 8th.

THE first open motor cycle hill-climb is being organised by the Oxford M.C.C. at a "secret" venue midway between Oxford and London on Saturday, April 8th. A record entry, totalling 125, has been received. The competitors are:

CLASS I.—Junior T.T. Machines, Singles up to 300 c.c., Twins 340 c.c.

Rider, h.p., and machine.	Rider, h.p., and machine.
Eli Clark (2¾ Douglas)	A. Webster (2½ Hobart)
J. Robertson-Brown (3½ Hobart).	Stuart Rigby (2½ New Hudson)
H. G. Dixon (2½ New Hudson)	F. W. Barnes (2½ Zenith-Gradua)

CLASS II.—Standard Touring Lightweights up to 130 lbs.

J. Dudley (2½ Hobart)	G. Patterson (2½ New Hudson)
Eli Clark (2¾ Douglas)	Harold Berwick (2 Humber)
J. S. Holroyd (2½ Motosacoche)	Percy Yates (2½ New Hudson)
H. G. Dixon (2½ New Hudson)	G. Temple (2 Singer)
	Norman White (2¾ Douglas)

CLASS III.—T.T. Single-cylinder Machines up to 500 c.c.

W. L. T. Rhys (3½ Triumph)	P. Weatherilt (3½ Zenith-Gradua)
P. Brewster (3½ Norton)	F. W. Barnes (3½ Zenith-Gradua)
Howard Smith (3½ Triumph)	F. G. Edmond (3½ Premier)
W. F. Newsome (3½ Triumph)	C. O. King (3½ Premier)
J. W. Tolloday (3½ Triumph)	K. H. Clark (3½ Corah)
Harold Bevir (3½ L.M.C.)	Lister Cooper (3½ Triumph)
Hugh Gibson (3½ Triumph)	W. G. McMinnies (3½ Triumph)
G. E. Stanley (3½ Singer)	V. J. Surridge (3½ Rudge)
A. Fripp (3½ Singer)	
H. Riddell (3½ Singer)	

CLASS IV.—T.T. Twin-cylinder Machines up to 670 c.c.

Hal Hill (5 Bat)	Percy Butler (5 "Dot")
O. C. Godfrey (5 Indian)	Sidney T. Tessier (5 Bat)

CLASS V.—Standard Single-geared Touring Single-cylinder Machines.

W. H. Elce (3½ Bradbury)	S. Crawley (3½ Triumph)
P. Brewster (3½ Norton)	G. E. Stanley (3½ Singer)
J. H. Slaughter (3½ L.M.C.)	A. Fripp (3½ Singer)
L. Merryweather (3½ Bradbury)	H. Riddell (3½ Singer)
W. A. Mathews (3½ Triumph)	G. F. Cooper (3½ Triumph)
H. G. Hill (3½ Bradbury)	F. G. Edmond (3½ Premier)
H. S. Askew (3½ Triumph)	C. O. King (3½ Premier)
S. Browne (3½ Bradbury)	R. N. Corah (3½ Corah)
A. T. Stanton (3½ Bradbury)	T. G. Hill (3½ James)
W. F. Newsome (3½ Triumph)	J. E. Webb (3½ Triumph)
W. Cooper (3½ Bradbury)	Rupert May
Hugh Gibson (3½ Bradbury,	J. W Tolloday (3½ Triumph)
B. Yates (3½ Humber)	Lister Cooper (3½ Triumph)
	C. S. Burney (3½ Rudge)

CLASS VI.—Standard Single-geared Touring Twin-cylinder Machines.

O. C. Godfrey (5 Indian)	G. L. Piercy-Henderson (8 J.A.P.)

CLASS VII.—Standard Touring Single and Twin-cylinder Machines fitted with Variable Gears.

E. A. Colliver (4 Zenith)	B. Yates (3½ Humber)
H. A. Beard (2½ New Hudson)	Percy Yates (2¾ New Hudson)
G. Patterson (2½ New Hudson)	F. W. Barnes (3½ Zenith-Gradua)
	Alan Hill (3½ Rudge)

CLASS VIII.—Any Type of Single or Twin up to 1,000 c.c.

Miss Muriel Hind (7 Rex)	W. Cooper (3½ Bradbury)
O. C. Godfrey (5 Indian)	Harold Bevir (3½ L.M.C.)
G. L. Piercy-Henderson (8 J.A.P.)	Hugh Gibson (3½ Bradbury)
J. S. Holroyd (2½ Motosacoche)	W. G. McMinnies (3½ Triumph)
P. Brewster (3½ Norton)	F. W. Barnes (3½ Zenith-Gradua)
J. H. Slaughter (3½ L.M.C.)	P. Weatherilt (3½ Zenith-Gradua)
L. Merryweather (3½ Bradbury)	A. H. Elston (3½ Bradbury)
W. A. Mathews (3½ Triumph)	F. G. Edmond (3½ Premier)
H. G. Hill (3½ Bradbury)	T. G. Hill (3½ James)
Percy Butler (5 Dot)	Lister Cooper (3½ Triumph)
E. A. Colliver (4 Zenith)	W. D. South (7 Indian)
H. S. Askew (3½ Triumph)	Alan Hill (3½ Rudge)
L. L. Sealey (3½ B.S.A.)	C. S. Burney (3½ Rudge)
A. T. Stanton (3½ Bradbury)	V. J. Surridge (3½ Rudge)
W. F. Newsome (3½ Triumph)	Sidney T. Tessier (5 Bat)

CLASS IX.—Passenger Machines.

W. H. Wells (7 Indian)	F. W. Barnes (6 Zenith-Gradua)
G. Lee Evans (7 Indian)	

BEST ENGLISH AND AMERICAN TIMES.

The following letters were received after our correspondence pages went to press:

"Sir,—In your last issue Mr. O. C. Godfrey, after complaining of the difficulty of riding his 7 h.p. Indian at a high speed on Brooklands, challenges your contributor to ride the same machine one lap at 76 miles an hour, and offers to give £10 to any charity named if your contributor should succeed. If Mr. Godfrey will extend his challenge to us, and will allow us to put his engine, intact, under his own supervision, into an A.S.L. frame, we will supply a rider who will ride the machine round Brooklands as often as Mr. Godfrey pleases at the highest speed the engine can reach.—AIR SPRINGS, LTD."

"S.A." writes: "I hope someone takes up Godfrey's challenge. I believe I am correct in saying that C. R. Collier's best timed speed at Brooklands exceeds 80 miles per hour."

We are informed by the Hutchinson Tyre Co. that the cause of C. R. Collier's stoppage in the Senior T.T. Race on the 18th inst. was not due to any tyre trouble. The Hutchinson tyres ran splendidly, and the delay was due to other causes.

B.A.R.C. OPENING RACE MEETING.

THE opening meeting of the season of the Brooklands Automobile Racing Club on Saturday was not wholly favoured with the proverbial Brooklands weather. One arrived in sunshine with a northerly wind as cold as a Provençal mistral blowing great guns, lunched in a snowstorm, watched the first and second races in sunshine, and suffered at least three more snowstorms in the afternoon. Considering the weather, however, there was a good attendance and plenty of good sport.

The first motor cycle event was the third 70 m.p.h. motor cycle handicap. Distance about 8½ miles. The machines passed the fork twice and then entered the straight. Open to all classes of motor cycles the observed speeds of which had exceeded sixty miles an hour for a Brooklands flying lap, or which were likely in the opinion of the handicappers to exceed that speed. First prize £10, second £5, third £3, or cups to the equivalent values.

Godfrey's Indian, which is a machine of which great things are anticipated, had auxiliary exhaust ports leading into neatly arranged "pepper box" exits. He was placed on scratch with C. R. Collier.

Start of the 70 m.p.h. Handicap.

At the start, which was at the fork, Godfrey, Shaw, and Taylor got away badly, while McNab went off with a tremendous wobble. The order at the first passing of the fork was: McNab, Burney, Surridge, Baker-White, Maitland, Stewart, Moorhouse, H. A. Collier (these in fairly close order), then Shaw, C. R. Collier, Colver, Godfrey, and Taylor. At the end of the second lap the order was: Burney, McNab, Surridge, and then H. A. Collier, Moorhouse, Baker-White, followed by Shaw, Maitland, C. R. Collier, and Godfrey. At the finish Godfrey led by about fifty yards. His speed was given as seventy miles an hour. The order at the finish was:

	Rider and Machine.	Bore and Stroke.	c.c.	Start. M.	S.
1.	O. C. Godfrey (2 Indian) ...	82.5 × 93	994	0	0
2.	C. R. Collier (2 Matchless) ...	85.5 × 85	976	0	0
3.	H. D. Shaw (2 Indian) ...	82.5 × 93	994	0	30
4.	A. J. Moorhouse (2 Indian) ...	70 × 82.5	635	1	21
5.	H. A. Collier (2 Matchless) ...	76 × 64	580	1	9
6.	H. V. Colver (2 Matchless) ...	85.5 × 85	976	0	9
7.	V. J. Surridge (1 Rudge) ...	85 × 88	499	1	54
8.	C. R. Taylor (2 J.A.P.) ...	85.5 × 85	976	0	30
9.	F. A. McNab (1 Trump-Jap) ...	85.5 × 85	488	2	0
10.	A. C. Maitland (1 Trump-Jap)...	85.5 × 85	488	1	48
11.	C. S. Burney (1 Rudge) ...	85 × 88	499	1	54
12.	R. N. Stewart (1 Trump-Jap) ...	85.5 × 85	488		48

The 65 m.p.h. Handicap.

The next motor cycle race was the seventh on the programme. It was a sporting event and favoured with twenty-seven entries. It was down in the programme as the first 65 m.p.h. motor cycle handicap.

Competitors lined up in the paddock for the 65 m.p.h. handicap.

B.A.R.C. Opening Race Meeting.—

Distance about 5¾ miles. The machines passed the fork once, and then entered the straight. Open to all classes of motor cycles the observed speeds of which had not exceeded 65 m.p.h. for a Brooklands flying lap, or in the case of machines which had not competed before and were not likely in the opinion of the handicappers to exceed this speed. First prize £10, second £5, third £3, or cups to the equivale values.

Assembling at "the fork" for the start of the second race.

The start was at the fork. F. C. White could n get going, while Meredith was rather slow at gettin away. Moorhouse and Barnes made excellent start The order of the leading men as they passed the fo for the first time was Barnes, Bolton, Ware Shank Weatherilt, and Wadham. Barnes, who was riding perfectly immaculate looking Zenith, won by abo thirty yards. His speed was given as 55½ m.p. The order at the finish was:

	Rider and Machine.	Bore and Stroke.	c.c.	Star M.
1.	F. W. Barnes (1 Zenith-Gradua)	85.5 × 85	488	0
2.	D. C. Bolton (1 Triumph) ...	85 × 88	499	0
3.	H. Shanks, jun. (1 Kingfisher)	85 × 60	340	1
4.	V. J. Surridge (1 Rudge) ...	85 × 88	499	0
5.	O. C. Godfrey (1 Indian) ...	82.5 × 93	497	0
6.	V. Wadham (1 Zenith-Gradua)	85.5 × 85	488	0
7.	A. J. Moorhouse (2 Indian) ...	70 × 82.5	635	0
8.	C. S. Burney (1 Rudge) ...	85 × 88	499	0
9.	E. B. Ware (1 Norton)	79 × 100	490	0
10.	P. Weatherilt (1 Zenith-Gradua)	85.5 × 85	488	0
11.	Dr. Hugh Gaskell (1 Triumph)	85 × 88	499	0
12.	J. C. J. de la Ferté (1 Zenith-Gradua)	85.5 × 85	488	0
13.	A. C. Maitland (1 Trump-Jap)	85.5 × 85	488	0
14.	H. P. Storey (1 Caeco) ...	81 × 67	345	1
15.	G. V. Fowler (1 Triumph) ...	84 × 86	477	0
16.	G. W. L. Meredith (1 Triumph)	85 × 88	499	0
17.	R. N. Stewart (1 Trump-Jap)	85.5 × 85	488	0
18.	F. A. McNab (1 Trump-Jap) ...	85.5 × 85	488	0
19.	F. D. Harrison (2 M.R.) ...	50 × 85	334	2

Barnes's win, which was made in a hailstorm, wa a triumph for the variably geared machine; the fa that he could lower his gear ratio while battling again the northerly gale and raise it when the wind assiste his progress accounted to a large extent for his succes W. D. Johnstone, who entered a twin Matchless, wa disqualified for having inadvertently made a wron entry.

THE AUTO CYCLE UNION ANNUAL GENERAL MEETING.

THE annual general meeting of the Auto Cycle Union was held in the R.A.C. premises in Pall Mall at 7.30 on Thursday evening last. Previous to the A.C.U. meeting the Royal Automobile Club House was thrown open to the members, and at 5 p.m. the parent body's annual general meeting took place, at which His Serene Highness the Duke of Teck took the chair.

The first business on the agenda of the annual general meeting of the A.C.U. Council was to pass the minutes of the previous council meeting, and the second item was to consider and pass the report of the committee. This report clearly demonstrated the amount of good work done by the Union in 1910. The third item was to receive and pass the accounts. At this point Mr. H. G. Cove pointed out a falling off in the receipts and an increase in the expenditure. The accounts, however, were finally passed. The chairman, Mr. Robert Todd, then announced amid applause that his Serene Highness the Duke of Teck had consented to become president of the Union. The following vice-presidents were elected: The Hon. Arthur Stanley, M.V.O., M.P., the Marquis de Mouzilly St. Mars, Professors C. V. Boys, F.R.S., and H. L. Callender, F.R.S., Colonel H. C. L. Holden, R.A., F.R.S., Messrs. G. F. Sharp, Robert Todd, A. J. Wilson, and Dr. H. S. Hele-Shaw, F.R.S.

The 1911 committee is as follows: Representing the R.A.C., Major F. Lindsay Lloyd, Messrs. S. F. Beevor, C. A. Smith, M. G. Duncan, J. S. Mallam, E. M. P. Boilean, G. F. Sharp, J. R. Nisbet, and L. Meyrick-Jones.

Representing individual members, Messrs. J. W. G. Brooker, H. G. Cove, W. Cooper, H. P. E. Harding, V. Hart, C. H. Hawkins, D. W. Morgan, W. Pratt, A. Sharp, Otto Thomas, T. H. Tessier, and W. H. Wells. The following clubs will be entitled to send representatives to serv on the committee: Herts County A.C. (M.C. section), Brad ford M.C.C., N.W. London M.C.C., Streatham and Distri M.C.C., Essex M.C., Surrey M.C.C., Cambridge M.C.C N. Middlesex M.C.C., Coventry and Warwickshire M.C Nottingham and District M.C.C., Manchester M.C., Purle and District M.C.C., Worcester M.C.C., Western Distric M.C.C., Oxford M.C.C., Richmond and District M.C.C Derby M.C.C., and the Walthamstow M.C.C. The fina business of the meeting was to pass the revised rules as sub mitted by the General Committee, which was duly done.

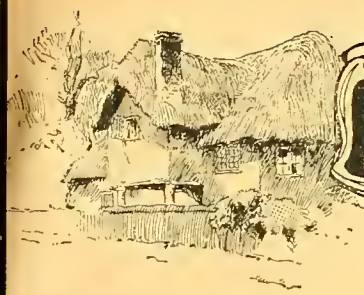
Mr. E. M. Oliver asked if the privileges members of th A.C.U. enjoyed as associates of the R.A.C. were accorde to members of affiliated clubs, as this point was not mad clear in the rules, while Mr. Marians asked a similar que tion on behalf of the Bradford M.C.C. The chairman replies to these questions were in the affirmative.

Mr. Straight then announced that the Birmingham M.C.C had invited the A.C.U. to hold its next council meeting i that city.

The proceedings terminated with a vote of thanks to th chairman.

After the meeting, which had been particularly wel attended, those present were shown round the new A.C.U premises by Messrs. J. R. Nesbit and C. A. Smith.

The Service Company's new accessory list is now ready Motor cyclists contemplating the purchase of accessories fo their machines, or clothing for themselves, should write t the company for a copy at 292-293, High Holborn, W.C The new edition contains 164 pages and over 600 illustration of specialities for motor cyclists.



CLUB NEWS

West of Scotland M.C.C.

The new Runs Committee has n constituted, and it is expected to hold the opening run the second Saturday in April.

Motor Cycling Club.

inety applications for dinner tickets for the opening run Brighton on Saturday next were applied for a week ago, hat the event is already an assured success.

Dudley and District M.C.C.

very successful meeting of motor cyclists was held at the lley Arms Hotel, Dudley, on the 13th inst., for the pur- of forming a club for Dudley and district. All motor ists in the district are cordially invited to communicate either of the hon. secs., G. Fenn, Aston Road, Dudley, P. Cooper Parry, The Laurels, Brierley Hill. The sub- ption has been fixed at 5s. with an entrance fee of 2s. 6d.

Plymouth and District M.C.C.

he A.G.M. was held on the 16th inst. The balance t showed a small balance in hand. It is hoped to nge a members' and also an open hill-climb for Good lay. The annual subscription is 5s., no entrance fee, and hon. sec. and treasurer is Mr. Albert E. Dyson, 26, imple Street, Plymouth.

Brookdale C. and S.C. (Motor Cycle Section).

was decided at a meeting held at Brookdale Hall, Cat- . S.E., on the 17th, to form a motor cycle section of above club. The hon. sec. is Mr. H. A. Cooper, Keston, t, who suggested two new forms of road trials. A com- ee has been nominated, and it is proposed to affiliate to A.C.U. The Brookdale has a conveniently situated club se open daily from 2 p.m.

Worcestershire M.C.C.

he annual general meeting was held at Worcester on March . The annual report and balance-sheet for the past being submitted and confirmed, the officers for the were elected, and the hon. secretary reported the entation by Vice-president H. G. Cove of an extremely dsome cup, which will be known as "The Cove Trophy." o runs will this year be arranged monthly. The first will be to Stratford-on-Avon on the 2nd prox. at 0 a.m. Mr. Ernest W. Cook, Foregate Press, Worcester, re-elected hon. secretary and hon. treasurer. Subscrip- s for the ensuing season are now due.

North-west London M.C.C.

paperchase was run off on Saturday last and proved a enjoyable event. The meet was at the Grape Vine, he top of Stanmore Hill, from which the hares, Messrs. A. Thompson and F. Thomas, had mapped out a course bout twenty-five miles, mainly through the lanes. Their nt was an 8 h.p. Jap-Cycar, and proved too fast for the nds, of whom there were fourteen. Soon after the start hares laid a false trail down into a farm yard, and this them a considerable increase on their start of three utes. The course then laid was Brockley Hill, Elstree, eham Wood, Shenley, Radlett, Aldenham, where a tri- ular false trail was laid, and then back through Bushey, ree, Brockley Hill, and Stanmore. Only one competitor owed the last part of the trail, as the very high wind carried it away. The hares had an exciting time sharp corner, where they turned the combination over broke one of the springs of the frame. They were, for- tely for them, able to replace it in time to get away out being caught.

Redcar and District M.C.C.

A meeting was held at Hartburn's Café, Redcar, on April 5th, at 8 p.m. Mr. F. C. Jones, 30, Vansittart Terrace, Redcar, will be glad to hear from motor cyclists in Cleveland wishing to join this club who were unable to attend.

Ilkley and District M.C.C.

A general meeting was held at headquarters on the 24th inst., Mr. F. H. Thompson was in the chair, and there was a large and enthusiastic gathering. After some discussion it was decided to hold monthly hill-climbing competitions, the winner and runner up to hold a silver and bronze medal respectively for the month.

North Staffordshire M.C.C.

A largely attended meeting was held at the Saracen's Head Hotel, Hanley, on the 23rd inst. for the election of the general and sports committees, in addition to the officers. Mr. Ashton, 36, High Street, Newcastle, Staffs., will forward on application entry forms for the Buxton Hill-climb on Easter Monday. Although only a month old the club now has forty members.

Newport (Mon.) and District M.C.C.

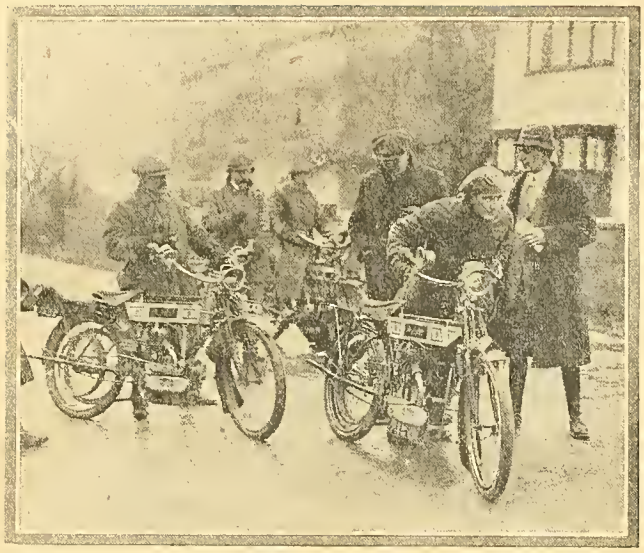
The opening run on Good Friday will be to Hereford, leaving Queen's Hotel at 9.30 a.m. A speed judging competition will be held on the run for a prize consisting of a pair of Kempshall tyres. All members who intend competing should advise the hon. sec., J. Pritchard, Central Chambers, Newport.

Surrey M.C.C.

The members' hill-climb originally fixed for April 26th has been cancelled owing to its clashing with the B.M.C.R.C. monthly meeting, and in lieu of it an inter-club hill-climb with the newly formed Hampshire County M.C.C has been arranged for April 5th. Intending participants should at once notify the hon. sec., Mr. C. J. Feeny, 1, Madiera Road, Streatham, S.W. All types of motor cycles, including lightweights, variably geared and passenger combines, will be eligible. On the same day, provided there are sufficient number of entries received, there will be a members' hill-climb.

Prizes presented to the Westmorland M.C.C. for the Shap Fell hill-climb on Easter Monday. The cups have been presented by Messrs. Atkinson and Griffin, Mr. H. J. Croft (Kendal) and Mr. C. P. B. Dean (Carnforth). Gold medals—Triumph Cycle Co., Ltd., and Zenith Motors, Ltd., besides which there are Palmer tyres and Dunlop and Lyso belts.

Club News.—



H. Petty (3½ h.p. Bradbury) starting in the Leicester M.C.C. reliability trial last Thursday.

Western District M.C.

The sincerest thanks of the members are due to Messrs. N. Hall, Wilson Prosser, H. Caudwell, and J. V. Armstrong who have made most generous contributions to the prize fund. The Kempshall Tyre Co. have also generously offered a pair of tyres as a prize in one of the club competitions.

The rules and conditions of the flexibility hill-climb at Dashwood Hill on April 2nd are ready, and to facilitate organisation immediate application should be made to J. V. Armstrong, Eden Hall, Montpelier Road, Ealing, W.

Leicester and District M.C.C.

The first competition for the Edwards cup was held on Thursday last, and was to be three times round a thirty miles course, starting from Kilby Bridge, and proceeding by way of Husbands Bosworth, Market Harborough, Oadby, and back to Kilby Bridge, but owing to miserable roads and pouring rain, the trial was reduced to two rounds. There were twelve entrants and nine starters. The following four tied for first place, each having a total error of 2m. 45s.: C. Bailey (3½ h.p. Clyde), T. S. Needham (3½ h.p. Clyde), W. Fowkes (3½ h.p. Bradbury), and W. Walker (3½ h.p. Bradbury). All nine entrants made non-stop runs. Timekeeper, Ernest G. Fowler; checker, E. Goodwin.

Forthcoming Fixtures.

Apr. 2nd.—Western District M.C. Flexibility hill-c at Dashwood Hill.
,, 8th.—Sheffield and Hallamshire M.C.C. Run to lock (Devonshire Hotel).
,, 15th.—Glasgow M.C.C. Holiday tour.
,, 16th.—Newport M.C.C. Easter tour.
,, 17th.—N. Staffs. M.C.C. Members' hill-climb Buxton district.
,, 30th.—Westmorland M.C.C. Rehability run for Challenge Cup.

Walthamstow M.C.

On Saturday next this club holds its opening ru Abridge, starting from headquarters, the Rose and Cr Hoe Street, at 3.30 p.m., and passing through Epping Ongar. Tea will be served at the Blue Boar. All moto are cordially invited. A ninety-four mile reliability com tion to Newmarket and back is arranged for the 9th p and also a speed-judging competition on April 22nd.

Birmingham M.C.C.

The eighth A.G.M. was held at headquarters on Satu There was a large gathering of members to pass the a report and elect some twenty new members. A numb other important matters were brought up for discussion, several new rules in favour of the amateur member duly passed. The opening run is to Stratford-on-Avo Saturday next. Tea at the Swan's Nest Hotel.

A.C.U. Midland Centre.

At the delegates' last meeting at the Imperial H Birmingham, the following officers were elected for ensuing year: Chairman, Mr. Geoffrey Smith (Cov and Warwickshire M.C.); secretary and treasurer, M C. Pickering (Sutton Coldfield A.C.); auditor, Mr. E Winckle (Birmingham M.C.C.). The matter of a race ing and gymkhana was considered, and, though not se it is very possible that the centre may be able to ar this in conjunction with an existing cycle tournament fi The question of starting a motor cyclists' club-hous the use and benefit of Midland riders was also discussed

Lincolnshire A.C. (Motor Cycle Section).

At a meeting of the committee held at headquarte Saturday last, it was decided to hold the Easter Monday climb at Leadenham instead of at Waddington as arra The present condition of the latter hill and espe the dangerous corner at the top, render it unsuitabl fast riding in safety. A meet was arranged with the and East Riding and Gainsborough Motor Cycle Club June 17th, at Scawby Gull Ponds (near Brigg). Speed are also on the *tapis*, probably early in June, and a with the Leicester and District and Nottingham and Di Motor Cycle Clubs at Belvoir, or in the neighbourhoo May. The committee elected Mr. Alf. E. Brunning Lincoln, as their chairman; and Messrs. W. Copley (Lin and A. D. Draper (Gainsborough) as vice-chairmen.

Competitors in the Leicester and District M.C.C. reliability trial for the Edwards Cup. Despite inclement weather all made non-stop runs.

Club News.—

Stockport and District M.C C.

The club's opening run will be held on Saturday, April 1st, to Rudyard Lake, *viâ* Congleton. Meet headquarters, White Lion Hotel, Stockport.

Grosvenor M.C.C.

This club has recently been formed to cater for the motor cyclists of Stretford, Sale, and Altrincham districts, and held its inaugural meeting on the 9th inst.

Mersey M.C.C.

Instead of touring in North Wales at Easter, the above club has decided to make Kendal its headquarters for the holiday week-end. The reason for this is to be found in a wish expressed by several members to be present at the Shap Fell hill-climb on Easter Monday.

Essex M.C.

The opening run on the 9th prox will start from the Eagle, Snaresbrook (the new headquarters) to Witham, where lunch will be served at the White Hart Hotel at 1.30 p.m. Members are particularly requested to inform the captain if they intend to be present, not later than April 3rd.

Redditch M.C.C.

The first annual meeting was held at the Unicorn Hotel on Wednesday, the 15th inst., when the secretary's report for last year was read and adopted, showing a balance in hand of £4 5s. 4d. It was decided to affiliate with the Auto Cycle Union at a cost of 2s. per member. The president (Dr. Protheroe Smith) offered a prize for the highest number of attendances at club runs, and it was decided to obtain by members' subscriptions a perpetual trophy to be awarded each year to the member scoring the highest number of marks in the various competitions.

S.E. London M.C.C.

The rules of this new club, which admit ladies to membership, have been passed and the various active officers and committee appointed. The date of the first run has been provisionally settled for April 8th. The hon. secretary, Mr. Vivian Edwards, 9, Honor Oak Park, S.E., will be pleased to hear from any motor cyclists in the neighbourhood wishing to become members.

Finsbury Park M.C.C.

A meeting will be held on Monday, April 3rd, at the Archway Tavern, Highgate, N., at 8 p.m., to discuss the question of forming a motor cycling club in the locality to be run on social lines. Any readers interested but unable to attend should communicate with Mr. R. G. Barrett, 54, Florence Road, Stroud Green, N.

Marlborough A.C. (Motor Cycle Section).

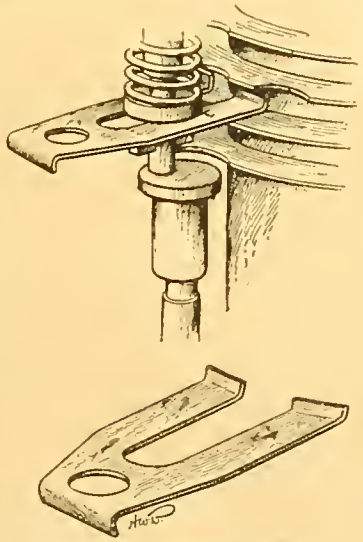
In response to numerous requests a section for motor cyclists has now been formed with headquarters at the Victoria Hotel, Kilburn, N.W. Competitions at present arranged include three reliability trials and a hill-climb, the first event, a 100 miles trial, taking place in April. Motor cyclists desirous of information regarding membership should write to the hon. sec., Mr. J. B. Ballantyne, 12, Gascony Avenue, West Hampstead, N.W.

Oxton and Claughton (Birkenhead) M.C.C.

A new club is about to be formed in Oxton and Claughton, suburbs of Birkenhead. Riders in the districts of Upton, Moreton, Bidston, etc., who are within a three miles radius of Oxton, are cordially invited to write to Mr. E. W. Kirkup, Sandcroft, Upton Road, Birkenhead.

J.A.P. TOURIST TROPHY ENGINES.

THE new premises of Messrs. J. A. Prestwich and Co., Northumberland Park, Tottenham, N., are admirably suited for the turning out of motor cycle engines, which the company commenced to manufacture in 1903, previously having been established for a long time as mathematical instrument makers. One of the latest improvements brought out by Mr. Prestwich is a valve cotter extractor, consisting of a flat piece of forked steel, suitably bent to the required shape. The two ends of the fork fit on to the radiating fins when the valve is raised. The valve cap is then removed and the tappet lowered; the valve is pressed down by a screwdriver and the spring being compressed, the cotter may be easily withdrawn. This is a simple and effective tool, which should prove of great benefit to riders of machines fitted with J.A.P. engines.



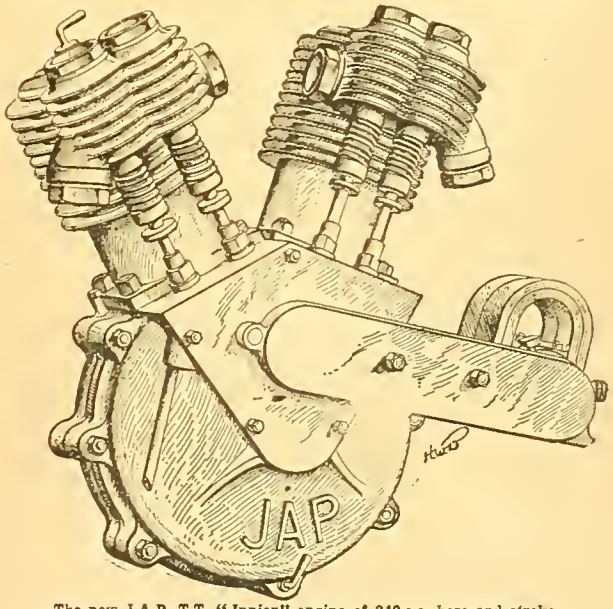
New J.A.P. valve cotter extractor.

The New Junior Twin.

Quite a new engine which has been brought out by the company is a 3 h.p. twin, dimensions 60 × 76 mm. The engine is practically a small replica of the 8 h.p., and is fitted with side by side valves. The lubrication in this, as in all other J.A.P. engines, is interesting. A relief valve is fitted on the inner side of the timing gear case, permitting the oil adequately to lubricate the timing gear wheels. At the bottom of the timing gear case is a small drain hole to allow the surplus oil to run back into the crank case. Mr. Prestwich has all but completed the Tourist Trophy engines. These will be—a single-cylinder lightweight, dimensions 76 × 65.5 mm.; a lightweight twin, 60 × 60 mm., valves placed side by side, while the following engines have been constructed for the Senior Tourist Trophy Race:

A twin-cylinder, 76 × 64 mm., with overhead valves, and a single-cylinder, 85 × 85 mm., with side by side valves.

These Tourist Trophy engines will be fitted with a ball bearing crankshaft and ball bearing big ends, the latter being of substantial construction. It is interesting to note that throughout the whole of last year Mr. Prestwich spent much money and much valuable time in experimenting to find a really durable exhaust valve, and we are happy to be able to state that his efforts have been rewarded with success.



The new J.A.P. T.T. "Junior" engine of 340 c.c. bore and stroke 60 × 60 mm.

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Jet Too Large.

I should be obliged if you could explain the following phenomenon: My motor cycle, which is 3½ h.p., is fitted with a Longuemare carburetter. With the throttle lever on one notch the engine stops, whilst on the next notch, which can only very slightly open the throttle, the machine goes at about 20 m.p.h., and will do nothing less except with spark fully retarded, when overheating naturally takes place.—A.T.F.S.

It seems that you have rather too coarse a ratchet control, and the lever on the throttle is probably loose. The throttle must also be a bad fit. Further the carburetter itself may lack adjustment, and a smaller jet might be beneficial.

Current Consumption.

I shall be glad if you could suggest a remedy for my little trouble. I have a 1¾ h.p. motor bicycle with Hellesen dry battery and plain coil ignition. Normally, the machine runs very well indeed and takes hills splendidly, but every few miles the engine begins to misfire, and if I stop refuses to start. I always find a tiny black or white speck on the contacts, upon cleaning which the engine starts off all right. Could it be because the coil takes too much curent?—H.V.H.

We think that your diagnosis is absolutely correct. Evidently the coil is taking too much current, or has an inefficient condenser, which does not quench the sparking at the platinum points sufficiently. Have it overhauled by the makers.

The Maximum Spark Position.

Having re-arranged the timing lever of magneto on a 3½ h.p. four-cylinder F.N., I should like to know where the maximum of armature is? When lever is in fully advanced position the platinum points are just separating, about 6 mm. before top of compression stroke. I find I get better results with maximum spark occurring in this position. Is this timing correct, please, or can I do better?—H.G.

If you have set the platinum points to break 6 mm. before the top of the compression stroke with the spark fully advanced the timing is about correct. If you wish to get the exact maximum position of the armature you had better write to the Bosch Magneto Co. and ask them to supply you with a booklet referring to the four-cylinder F.N. or an equivalent magneto machine. In "Motor Cycles and How to Manage Them" the timing is given for the ordinary type of magneto which runs at half the speed of the engine.

Overheating and Unequal Lubrication.

My 5 h.p. twin a.o.i.v. machine is fitted with an Amac carburetter. Everything seems all right except that it rarely will run with any extra air, and it will not run slowly unless one cylinder is misfiring very badly. The engine gets excessively hot, the exhaust valve springs lose their temper, and the petrol in the tank gets warm. The back cylinder gets sooty, whilst the front keeps clean; and yet the piston rings are an excellent fit. I would be very grateful if you would tell me how to cure this overheating, etc.?—A.P.C.

The trouble is most probably due to the main air supply being too great. If you fit a smaller choke tube this should enable the engine to fire regularly at slow speeds. The overheating is difficult to understand, unless the cylinders are very foul. After attention to the carburetter the adjustment and amount of opening of the inlet valves is the most important consideration. The springs should be of exactly equal tension and the amount of opening of the valves precisely the same. You cannot help the two cylinders behaving in a different manner, as one usually gets more oil than the other. Some riders cut away the crank case web of the under-lubricated cylinder and oil less often.

Single or Two Speeds with Sidecar.

What is the steepest hill I could expect the 7 h.p. cone clutch Rex with Sidette attachment to climb with combined weight of passengers about 24 stones? From my own experience of a 3½ h.p. and sidecar I should think it ought to climb practically anything geared, say, 4½ or 5 to 1. I know that you are in favour of two speeds for passenger work, and I should like to say that I now have

EXTREMES MEET. No. 2.

We have received another photograph of an unique gathering. This time, as will be seen, there is an elephant, horse, car, motor cycle, horse and trap, and "push cart."

a 3½ h.p. two-speed, and although I have nothing whatever to complain of in the way of reliability, I do not like the cumbersome appearance of the rear wheel, which I also find very difficult to clean. My greatest fear with regard to the 7 h.p. clutch model is with regard to starting the combination on a gradient. Do you think it would start on an up-grade of 1 in 7 with 24 stones up as easily as a 3½ h.p. two-speeder?—J.B.S.

Provided the machine has a two-speed gear it should climb practically all main road hills such as Birdlip and Sutton Bank without difficulty, but not, of course, if it had only one gear as stated in your letter. To climb Birdlip it would have to have a gear ratio of about 8 to 1. Certainly it would not start on a gradient of 1 in 7 with a single gear. A variable ratio is absolutely indispensable for general work.

Rigid or Castor Wheel Sidecar.

I should be grateful if you would let me know whether you recommend a rigid or a movable wheel sidecar for a Humber two-speed motor bicycle just ordered, and, if the latter, whether it should be of the castor or radial wheel variety.—J.P.

You would be quite safe with either a rigid or castor wheel sidecar. The rigid sidecar possesses the advantage of being free from side-slip and of being light, while the other is certainly less strain on the machine but weighs heavier, and there is a certain amount of side-slip. The comfort of the passenger is equally secured in both cases.

Starting Difficulty.

Will you kindly suggest how to remedy the non-starting of machine? It is a 2½ h.p. single-cylinder, a.o.i.v., wipe and trembler, compression perfect. Exhaust opens at ⅘ firing stroke, and closes as piston is on top dead centre. Inlet valve opens with 1½ lb. weight. Exhaust pipe and silencer perfectly clean. Petrol flows freely to carburetter. By flooding, engine fires half a dozen times and stops. I have tried spark in every possible position but cannot get engine to fire, though the ignition appears (by the buzzing of trembler) to be all right. Every pipe, etc., is perfectly clean. It is a 1903 machine, and the engine bearings are in good order.—W.R.

Probably if you fit a shutter device to the main air supply of the carburetter so that the air can be wholly or partially closed at the moment of starting, the engine will start without difficulty. Are you sure that the jet is not stopped up? Probably if you overhaul the carburetter and see that the jet and passage to it are quite clear you will not need to take such drastic steps as are first recommended in our advice. Make sure that there are no leaky joints or unions between the engine and carburetter which would allow the engine to suck in air and so weaken the mixture.

Spray Carburetter.

Would you be kind enough to advise me on the following matter: I have a 3⅜ h.p. old pattern Rex surface carburetter. It has been thoroughly overhauled, and is in good condition throughout, and goes well. The only trouble that I get is in operating the air lever occasionally—the engine will run all right for a time on part air and then slows down, but as soon as I close the air a little it picks up again, and runs for a while, and then slows again, and forces petrol out of the air inlet, which floods the cylinder apparently, and I have to pedal on giving air to make the engine fire again. Can you suggest the cause and remedy? I have been thinking of converting same to spray. Would this conversion add to the power and running, or *vice-versâ*? The machine, as you will know, is what is now termed high, but I have a very low saddle position and long handle-bars. Would you suggest cutting down the frame whilst about it, or would it not be worth while?—W.I.P.

As far as we can remember, the machine in question is not a 3⅜ h.p., but either a 3 h.p. or a 3¼ h.p. Date 1903 or 1904. We can speak from experience, as we owned one of these machines at that time, and found exactly the same trouble as yourself. It is solely due to the carburetter, and the addition of a spray would completely cure the trouble. All you would need is a bracket for fixing on the carburetter, which would have to stand out slightly from the side of the machine, and half of an inlet pipe, which could be coupled up to the existing half of the inlet pipe by means of a union. The fitting of a spray carburetter should considerably add to the power and control of the machine. First of all carry out the carburetter alteration, and then, if the improvement is sufficiently marked, you might try lowering the frame.

Too Small a Jet.

I have a Quadrant motor cycle 1908 3½ h.p., and my trouble with it is that it will not run slowly with the spark properly advanced—it either goes about twenty miles an hour or quietly stops. I have had it recently fitted with a new carburetter, the only trouble with which has been the cables rusting off at the ends in about two months. With fully retarded spark the bicycle will run about ten to twelve miles per hour, but I have to watch the petrol supply carefully, as it has a tendency to race or stop—it does not take much air. I shall be glad if you can give me any hints as to what the trouble may be.—H.L.D.

We should be inclined to think that the trouble is due to the carburetter having rather too small a jet or else that too much air is allowed to pass. To run slowly it is essential to have a rather strong mixture.

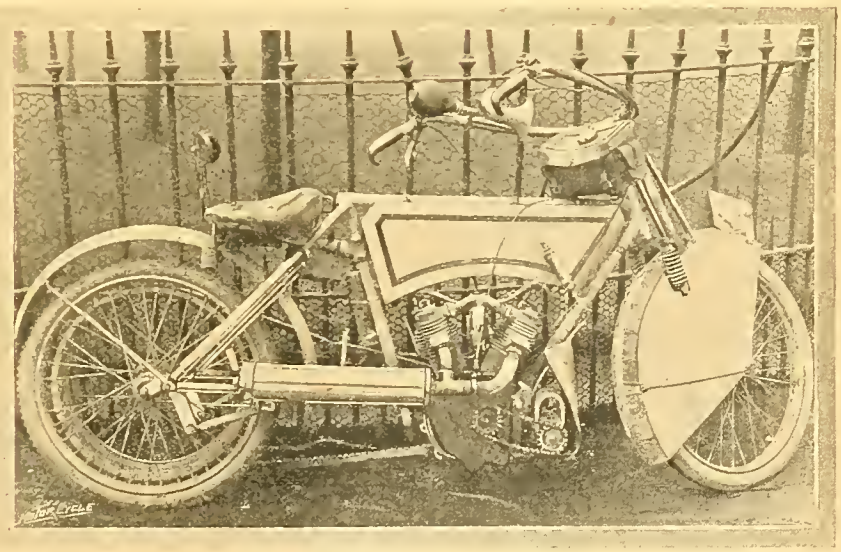
EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"E.R.S." (Northallerton). Fit-all two-speed engine-shaft gear on a Quadrant motor bicycle.

"Querist" (Romsey). 1911 Douglas with two-speed gear and free engine clutch; particularly the gear and clutch.

"Z.Z." (Wolverhampton). Firmax puncture sealing compound. Has it any appreciable effect on the rubber of the tyre?



IMPROVEMENTS TO A 1906 MODEL.

The 1903 pattern twin Rex illustrated belongs to a Mr. Hendry, of Edinburgh, and has covered 40,000 miles. As will be seen the owner has carried out some interesting alterations. We direct attention to the springing of the rear wheel, the enclosed front wheel, the large silencer, besides which nail catchers have been fitted. Up-to-date equipment includes Druid forks, Brooks' pan seat and backrest, B. and B. carburetter, and Palmer tyres.

Hill-climbing in New Zealand.

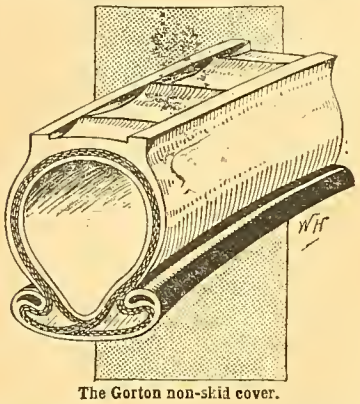
The first and second prizes on time and formula at the Invercargill annual hill-climb, New Zealand, were won on Douglas machines.

Rovers in London.

The new model Rover motor bicycle is on view at the company's London showrooms, 59-61, New Oxford Street (corner of Shaftesbury Avenue).

A New Tyre.

A new and original design of motor cycle tread has been introduced by the Gorton Rubber Co., Ltd., of Cornwall Street, Openshaw, Manchester, and from a sample we have received we can imagine that it is a most effective non-skid. The outer ribs of the tread being sharply defined should check any



The Gorton non-skid cover.

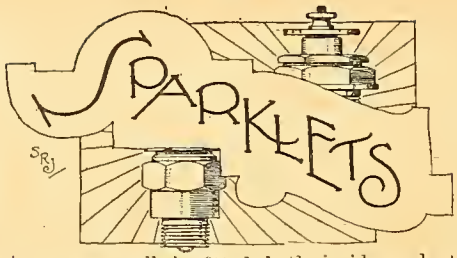
tendency to skid, and at this point the rubber is of substantial thickness, promising long life. Between the two ribs, lateral concave corrugations are formed, which further help to render the tyre stable on greasy surfaces. Gorton motor cycle tyres are made in two grades and in all popular sizes.

U.M.I. Extensions.

We are informed that Mr. E. de Rodakowski has been appointed chairman of the United Motor Industries, Ltd., and it is the intention of the Board to extend and enlarge considerably the sphere of activity of this well-known concern.

Repairing Damaged Covers.

From specimens we recently saw of Messrs. Tom Cann's methods of repairing tyre covers we are firmly convinced that many a tyre finds its way to the scrap-heap which can be effectively repaired by competent workmen. At the company's Leicester works heaps of well-worn and ancient motor cycle covers await attention, some with bad gashes caused by running over a bottle, others with the beads almost torn off. The average motor cyclist would discard such a cover, but Tom Cann, Ltd., have laid down special machinery to make sound repairs. For bead repairs



a new wall is fitted both inside and outside. The outside consists of special tanned leather which will withstand heat. The inside is of the toughest canvas, and the section itself is modelled under Cann's patent hot air process, which means that after the repair the tyre is the same shape as when new. To make the repair doubly secure the strengthened layers are stitched through by hand. The left-hand cover in the illustration is a typical example of a damaged tyre sent to this firm for repair, the right-hand illustration depicting the cover after treatment of the fracture and the fitting of a rubber-studded tread. From the number of testimonials we have seen Messrs. Tom Cann, Ltd., whose address is High Street, Leicester, are giving genuine satisfaction to their numerous clients. In twelve months we are told that 2,500 tyres have been successfully repaired.

Lyso Belts.

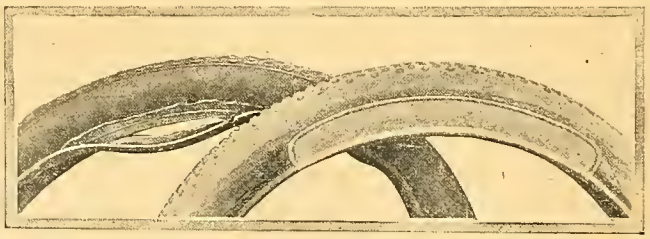
At the B.M.C.R.C. meeting, on the 18th, J. Slaughter (L.M.C.) and V. J. Surridge (Rudge), who rode the first single-cylinder machines in the Penalty Handicap and Senior T.T. Races, used Lyso rubber belts.

New Address of Indian Depot.

On and after April 5th the Indian depot will be moved from 184, Great Portland Street, to 178 in the same street. At the new address there will be greater space for sidecar combinations.

The Swift-Ariel Motor Bicycle.

During a recent visit paid to the Swift Cycle and Motor Co.'s showrooms, 15 and 16, Holborn Viaduct, London, E.C., Mr. F. H. Bale, who is handling the Swift-Ariel motor bicycle, told us that the 3½ h.p. 1911 model was much in demand at the present time. The Swift Co. is going seriously into the motor cycle business, and has



A smart repair and retread, by Tom Cann, Ltd.

installed a large garage and workshop close to the showrooms. At the latter place Swift-Ariel machines may be examined, while prospective purchasers will be glad to know that there is no delay in delivery at present.

Tyre Successes.

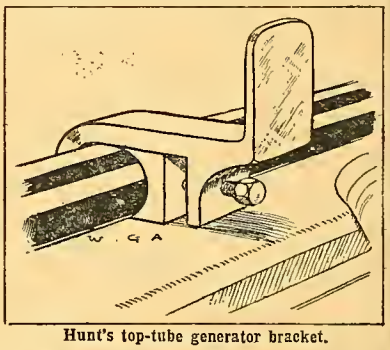
At the B.M.C.R.C. meeting on the 18th S. T. Tessier's Bat-Jap was fitted with Continental tyres. Tessier won two first prizes, and, furthermore, no competitor whose machine was fitted with these tyres experienced any trouble.

Bat Motor Cycles.

A booklet of the British-built Bat has reached us from the Bat Motor Manufacturing Co., Kingswood Road, Penge, S.E. In view of the trend of design, it may be recalled that the standard model Bat has never been fitted with pedalling gear. Touring singles and twins, two-speeders, and T.T. models are listed. The comfort of the rider is well considered in these machines, and the fact that only the best fittings are used, including the world-famous J.A.P. single and twin-cylinder engines, should help to make the flying Bat still more popular.

A Top-tube Generator Bracket.

Messrs. Hunt's Stores, Ltd., have introduced a particularly neat bracket



Hunt's top-tube generator bracket.

to hold the generator, which is easily attached to the top tube of any machine. The accompanying sketch clearly shows the article.

All-British Shopping Week.

Messrs. A. W. Gamage, Ltd., are making a huge display of all-British goods for the week, and attractive displays will be given in all departments.

Catalogues Received.

Richford and Co., 153, Fleet Street, E.C., have sent us their 1911 price list of ignition accumulators and electrical sundries. This firm makes a special feature of accumulator repairs. The list will be sent post free to any address in the United Kingdom on receipt of postcard.

We are in receipt of the latest New Hudson catalogue, which should appeal to those who are on the look out for a serviceable lightweight machine. The New Hudson lightweight with Armstrong three-speed gear has already met with a hearty reception.

Messrs. the Dunlop Rubber Co., Ltd., Manor Mills, Aston, Birmingham, have just issued a well illustrated and well got up catalogue. Special attention is given to garments for motor cyclists, among which we may mention the Dry-knee jacket, fitted with protectors for the knees, which button up inside the coat when out of use, and a large variety of jackets and over-alls. We may also mention numerous types of gloves, gaiters, goggles, and waistcoats.

THE MOTOR CYCLE

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

Easter Jaunts.

A WEEK hence thousands of motor cyclists will embrace the opportunity provided by a few days' holiday to enjoy their favourite pastime, and north, south, east, and west the familiar beat of the motor cycle engine will be heard the land. We feel that it is our duty to issue a arning note at this juncture, free from any carping nse of criticism, directing attention to a few simple cts which should be borne in mind by motor cyclists enerally, and particularly at a holiday time when the ublic eye is upon us more than at any other period the year. Some riders are, of course, circumspect all times, and our advice is not intended for them, t to those new to the pastime—and they are not w—also to the less cautious among us, we make this peal. Next week let us show the public that motor cles can be used anywhere and everywhere without using the slightest inconvenience or annoyance to hers. Therefore when starting for our holiday unts we must remember to keep the cut-out closed til the open country is reached, and to pass through l towns and villages at a moderate speed and as ently as possible. When overtaking other traffic e should always give warning of our approach, and any horses or their owners show signs of restiveness smount or ride by very carefully. The usual acknowdgment generally follows, but even if it does not it nice to think one is helping forward the movement courteous behaviour to those who are sometimes t to look upon us with disfavour.

One can, of course, be imposed on by some classes holiday makers who are on the road, and any form discourtesy or obstruction on their part should form e subject of complaint to the nearest police station. What we wish to impress on readers is the importance of spreading a good impression generally at a time when the roads are more than usually thronged.

Novice riders would do well to remember that spring is a treacherous period; therefore do not undertake long rides improperly clad. Further, be sure to carry a properly fitted tool kit and a few necessary spare parts. For those who do not wish to burden themselves with luggage, it is a good plan to fix on a known stopping place and send on a change of clothes in advance. Many experienced tourists do this, and although a motor cycle will carry a voluminous and weighty outfit as well as its rider, it is just as well to travel unhampered if one knows one's destination in advance. Another hint that may be of service, particularly if the tourist finds himself in sparsely populated districts, is to replenish the petrol and oil tanks overnight at the first convenient petrol store he finds open. One would think that at holiday times, when so many riders are on the roads, all dealers in petrol, etc., would keep their premises open; the larger garages do so as a rule, but in rural districts, where supplies are obtained from ironmongers' shops and small stores, it is not unusual to find the premises closed on Bank Holidays.

Above all, we would warn beginners to be careful of their speed, particularly at cross-roads and bad corners. Accidents are sure to occur this Easter; there has been a vast increase of riders this last twelve months, so proceed with the control well in hand, make sure beforehand that both brakes and valve lifter are in order, and there is nothing to fear. Beginners are liable to underrate the speed capabilities of modern machines, and our words of caution will be, we know, taken in the spirit in which they are intended.

Finding a Winning Team.

By B. H. DAVIES.

FOR some years past club secretaries have had to rack their brains to find an absolute winner in club competitions which were once rapidly decided on the simple non-stop basis. The machines of to-day simply will not stop—hence the crow's-foot wrinkles and grey patch of hair on the temples by which the motor cycling Sherlock Holmes can recognise any club secretary at sight.

The trouble is considerably complicated for those unfortunate individuals who have to find a winning team out of a hundred or more ardent riders congregated from the distant fastnesses of our—on Saturday night, at any rate—"tight" little island. The usual resource of these much harassed officials is split second timing.

Reliability *per se* is Discounted.

Punctuality at frequent controls, pressed if need be to the fifth part of a second, is demanded of us in a so-called sporting ride. The sole merit of this oft-employed device is that it ensnres the finding of an absolute winner. It has marked disadvantages. It necessitates the engagement of a highly skilled official, with three or four bulging vest pockets, each shrouding a £50 chronometer. It leads to a good deal of grumbling, as the country rider refuses to believe that the Kew chronometer can possibly be right when it gives the lie to his own ancient nickel turnip. And it absolutely spoils the ride for the average competitor.

Instead of chewing chocolate, or winking over his shoulder at the amused damsels who turn out to criticise our weird taste in overalls, he has anxiously to keep one eye on his handle-bar watch and the other on multitudinous little wooden mileposts, ensconced for the occasion just where the nettles grow thickest round a blind corner. Surely some better plan can be discovered. Three plans occur to me, each of which eliminates the split second bogey, each of which practically ensures the easy and frictionless discovery of the winning team.

The policy has always been to import a certain premium upon an elementary degree of skill. The mere non-stop basis rewards rudimentary ability in tuning and in handling. To increase the demand for mechanical skill is unfair to the minor provincial clubs, who rarely number any professional mechanics in their *sextette*, while a London or Coventry team may be wholly composed of men who make a living by riding.

A Course with a Real Test Hill.

The first and simplest plan is to select a new course, to include a really exacting test hill such as Sunrising, which would have to be climbed on every lap. Hill-climbing ability undoubtedly stiffens the skill test, but it stiffens it in a practical direction. We need better climbing. *We do not need the ability to ride to a split-second schedule,* which is purely arbitrary and a great nuisance.

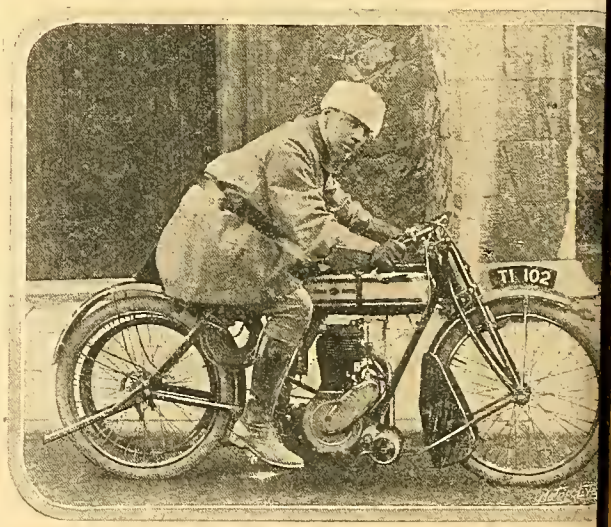
Petrol Consumption on the Last Lap.

The second plan has the merit of enabling event to be decided in a single day, without unc stiffening the skill test. If several teams score marks apiece in the first stage under an elastic limit rule, give each man a pint of petrol, and the survivors off on a last lap. Employ a sir formula, such as Archibald Sharp can toss off in minutes, to level up the value of each additional so covered by the riders of, say, a 1¼ h.p. M sacoche and an 8 h.p. Bat.

A Re-run Final with Bigger Teams.

The third plan is good, but entails a sec fixture. Let the surviving teams re-assemble o second date, but let each team be swollen by additional of three, four, or six extra representat A second tie between teams now increased to ten, or twelve riders apiece is in the last de improbable.

I think the idea of an All-England team between London and Edinburgh is illusive. clubs could find six riders able to take so lo holiday simultaneously. Moreover, the non-stop would have to be scrapped because of the in sibility of observation, and the objectionable second system would have to be retained extended. If it is odious over a hundred mile c it is *a fortiori* more objectionable over a four hun mile course. The great charm and popularity o team trials is chiefly ascribable to their simpli and the split-second schedule business has by means increased their pleasures. Let us hope system will die a natural death.

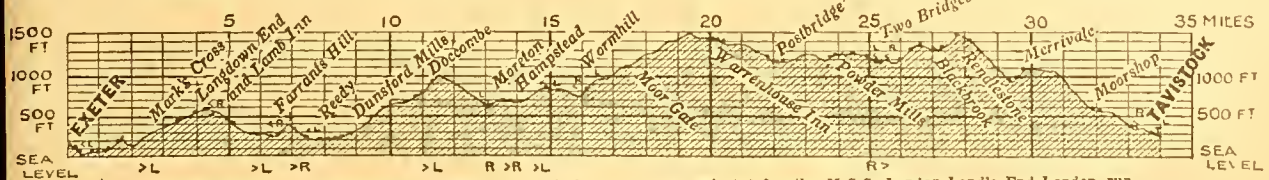


A. M. C. Scott, the writer of the notes on opposite page. Mr. Scott is hon. sec. of the Exeter and District M.C.C., and rides a T.T. Ru Whitworth.

THE LONDON—LAND'S END—LONDON RUN.

Contour Section of the New Route between Exeter and Liskeard.

COMPETITORS in the Jarrott Cup competition will this year find a far sterner task before them than previously on account of the alteration in the route from Exeter to Redruth, which, instead of following the classical End-to-end road *via* Okehampton and Bodmin, runs across Dartmoor to Tavistock and thence to Liskeard and Truro. Not only are hills encountered in this section that were undreamt of on the old route, but if the weather conditions are not of the best it will be an intrepid rider indeed who consistently averages 20 m.p.h.



Contour section of the road over Dartmoor, part of the new course selected for the M.C.C. London-Land's End-London run.
From Gall and Inglis Contour Road Book.

Leaving Exeter, competitors will proceed as formerly for one and a half miles, then, instead of branching to the right to Okehampton, the road straight ahead is followed up a short but stiff hill. From here, Baker's Hill, to Moreton-Hampstead the road may well be described as twelve miles of corners with one or two Devonshire hills interspersed, and riders would be well advised to lower their gear considerably at Exeter, otherwise the four to one speed merchant will pay the penalty of his ambition.

Just before the sixth milestone from Exeter a sheer descent is met, which, though straightforward, calls for caution, as the road narrows at the bottom, and approaching traffic is hidden by the high banks. From here the next few miles are typical of lovely Devon. The winding road ascends a miniature pass by a very easy gradient, and one of the most beautiful views of the whole ride is seen—oak woods towering behind and to the left, and a sheer drop on the right to the noisy little river Teign some two hundred feet below.

On the slope up to Moreton-Hampstead competitors must be prepared for an acute-angled one in five corner—the road is wide and good, but the corner comes unexpectedly and proves a tartar to many strangers.

The Open Expanse of Dartmoor.

Two and a half miles from Moreton-Hampstead Worm Hill will humiliate the owners of high gears and hot engines, but shortly afterwards the open expanse of Dartmoor is reached, and here lost time may be regained.

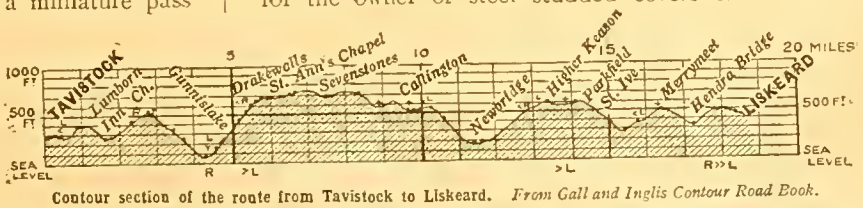
The run over Dartmoor is most enjoyable, but calls for no particular comment until Two Bridges is reached. Here two bad corners on the descent must be treated respectfully, otherwise a forty feet drop into the backyard of the hotel awaits the man who makes a mistake on the second one.

The stretch from Two Bridges to Liskeard boasts some very sturdy hills; the first stage, Two Bridges to Tavistock, is over a perfect road, hard and wide, and when dry with a surface like a skating rink. This stretch is much harder on the return journey—even a stranger will realise from the contours that Moorshop and Merrivale Hills are not to be despised, and when encountered are no less formidable. They are steep and very very long, and should a good Dartmoor gale be blowing down their slopes hot engines will stall many competitors.

Four miles from Tavistock one crosses Gunnislake Viaduct, and meets straightway perhaps the worst hill of the whole route, very long, very steep, with the stiffest portion right at the top where the road runs underneath the railway. The approach to Gunnislake on the outward journey is down a long winding slope with a surface which becomes very greasy on the slightest provocation. The same remark applies to the long descent into Lostwithiel, between Liskeard and Truro, on the outward journey. The ascent out of Lostwithiel is very long and steep, but in no way tricky, but those who negotiate Gunnislake successfully will not come to grief here.

Narrow Streets and Bewildering Corners.

The road from Lostwithiel (four syllables) to Truro and thence to Redruth is uneventful (except for the owner of steel studded covers on the stone setts of Truro), though St. Austell possesses narrow little streets and bewildering corners. Here competitors must take no notice of the signboard marked "Main road" in the centre of the town, it is *a* main road, but not the one we want; we must take the *next* turn to the left. Five miles before Truro the route goes through the village of Probus, famous for the vile surface of its roads.



Contour section of the route from Tavistock to Liskeard. *From Gall and Inglis Contour Road Book.*

The writer, after living on the borders of Dartmoor for some years, can assure competitors that after a successful and, we trust, non-stop run from Exeter to Truro, and Truro to Exeter, little slopes like Dashwood and Rectory will henceforth be traversed unnoticed, and, apart from this consolation, the new section of the Jarrott Cup route will prove vastly more interesting than the old section, including as it does the width of Dartmoor, with some of the wildest and grandest scenery in England.

A. M. C. SCOTT.

A THREE-SPEED WORM-DRIVEN GEAR.

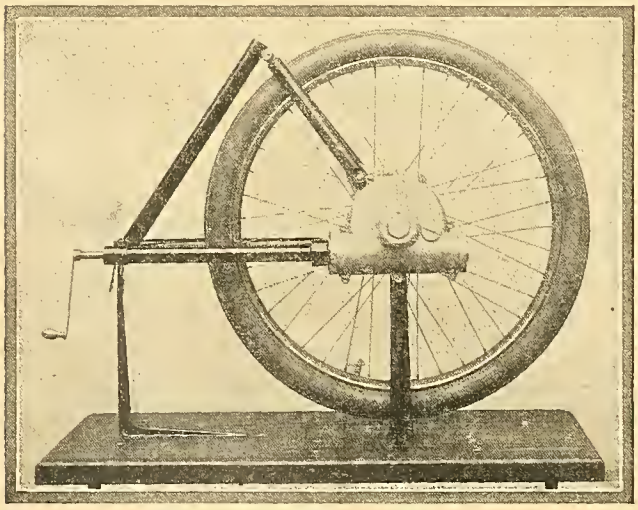
DIRECT DRIVE ON ALL SPEEDS. A PROMISING DESIGN.

A CHANGE-SPEED gear for motor cycles, the design of which exhibits much promise, has been submitted to us by its inventor, Mr. M. Buch, who informs us that he has been experimenting since 1906 with a view to producing on sound mechanical lines a worm change-speed gear which will give a direct drive on all speeds, and will in its efficiency be superior to the best-known change-speed gear devices. He has tried various designs with roller teeth, pins, and other devices, and considers that he has succeeded in solving the direct-driven change-speed question with the gear which forms the subject of this article. Among the claims made are that it is perfectly silent in running on all speeds and can be properly lubricated; the gear parts are easily accessible, and it is possible to exchange the complete wheel including the hub and gear for a spare similar unit in a matter of minutes.

All Gears in Mesh.

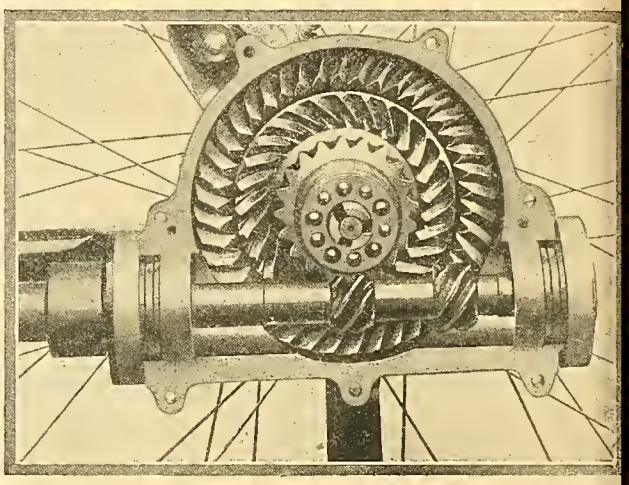
As all the gears are constantly in mesh, and revolve idly until one of the wheels is locked to the driven shaft, gear changing is made extremely easy, as it is effected at a relatively slow speed. This is occasioned by the fact that, no matter how fast the speed of the engine, only the relative speed difference between the two gears which have to be changed has to be considered.

For instance, assuming that the second speed is engaged and the machine running at 25 m.p.h., to change over to the top speed, say 35 m.p.h., the relative speed difference between the two gears would only be ten miles, as both gears are already running in the same direction. The same relative difference between the gears running in the same direction accounts for the use of plain bushes for the gear sleeves to run on. The sleeves only take the weight of the gear wheels when the latter are running idly, and never when transmitting power, because whichever gear wheel is locked to the driving hub the power is passing through that wheel only.



A general impression of the model gear. The handle on the end of the propeller-shaft is for rotating the shaft while the gears are changed.

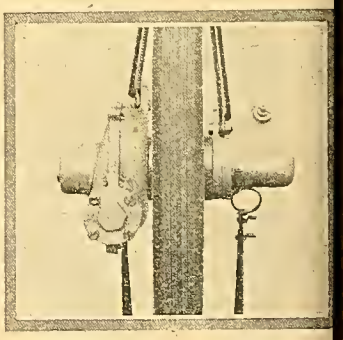
Of course it will be recognised that, to use a direct drive on a motor cycle as indicated in the illustrations the engine crankshaft must be placed parallel with



Side view of the worm gear with cover plate removed.

the wormshaft on the lines of the F.N., Roc, and other gear-driven machines. By placing the engine-shaft in line with the wormshaft and transmitting the power from the engine direct, the inventor claims that the cycle frame is relieved of all bending strains which exist with the ordinary type of belt or chain transmission.

Against this there is, of course, the friction of the worm gear to be taken into account, but with the very latest methods of cutting the worm teeth and the provision of ball thrust bearings, efficiency is extremely high. On the model submitted to us no arrangement was made for declutching the engine from the gear at the moment of changing speed, but it is, of course, a comparatively simple matter to introduce a friction clutch between the propeller-shaft and the engine.



Appearance of the three-speed worm-driven hub from the rear.

How the Gear Works.

We will now explain the working of the gear, which is extremely simple, and merely consists of locking one or other of the gear wheels shown in the sectional drawing to the driven hub. The gear wheels are lettered B, C, and D. B and C are in mesh with the worm E, whilst D is in mesh with the worm F, the whole being enclosed by the aluminium casing A. The wormshaft is connected to a propeller-shaft leading to the engine or friction clutch, and the driving shaft can be made to revolve inside the left-hand chain

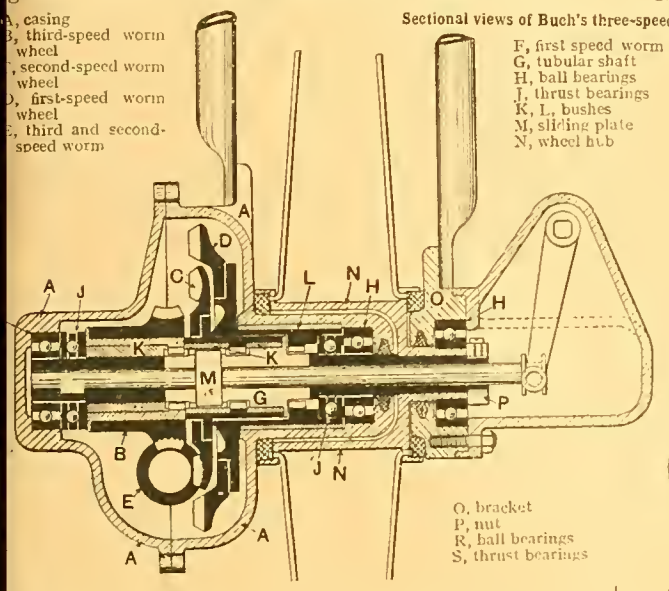
Three-speed Worm-driven Gear.—

ay of the frame, and can also be fitted with a start-g gear to engage with the pedalling gear axle. G a hollow shaft running in ball bearings H H H and rust bearings J J, the ball bearings being carried the stationary frame member and the casing A A. he shaft G is grooved longitudinally, and surround-g it are bushes K on which run the driven worm

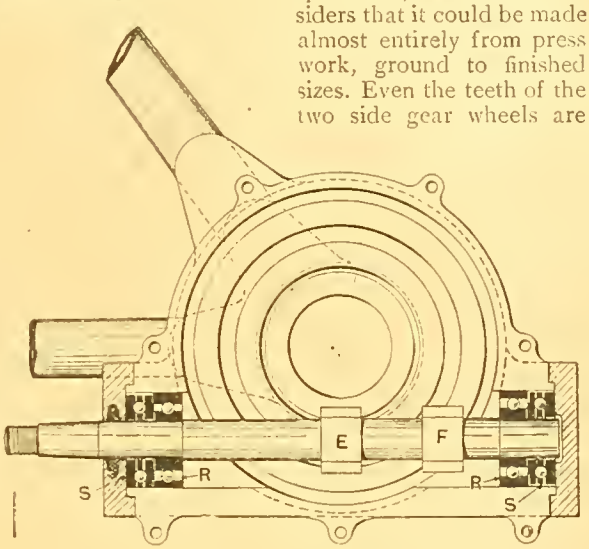
A, casing
B, third-speed worm wheel
, second-speed worm wheel
D, first-speed worm wheel
, third and second-speed worm

Sectional views of Buch's three-speed worm-driven gear.

F, first speed worm
G, tubular shaft
H, ball bearings
J, thrust bearings
K, L, bushes
M, sliding plate
N, wheel hub



O, bracket
P, nut
R, ball bearings
S, thrust bearings



heels B and C. The wheel D has its bush L in e casing A. The shaft G is reduced at intervals, d into each space project internal teeth provided each gear wheel. These teeth correspond to the ooves on the driven shaft G. To enable the gear heels to be locked independently to the shaft G, the tter is slotted to enable a sliding plate M to be oved between the teeth on the gear wheels and the ooves on the shaft. The driven shaft G has a ding connection with the hub N of the road wheel, e latter being supported between the casing A and e bracket O of the frame. If it be found desirable remove the wheel and the gear, all that is necessary to take off the nut P and remove the casing, when e tubular shaft and the gear members upon it may withdrawn, the sliding connection between the bular shaft and the hub of the road wheel per-itting this. The wormshaft carrying the two worms ns in ball bearings R and S, one of which is the rrying bearing and the other the thrust bearing.

Weight and Manufacture.

In the illustrations the change of speed is effected means of levers and a rod passing through the ntre of the hollow shaft G, but during the tests, hich consisted of running the gear in a lathe, it was ound that speed changing was so easy that it would e possible to substitute a Bowden wire control, which ould, of course, make the gear very much neater.

The patentee tells us that, although he has d no proper means of ascertaining the efficiency the gear, he knows that it must be good, because nder test, when the gear was running continuously 800 r.p.m. for eight hours, the casing kept perfectly ool—cooler, in fact, than the average worm-driven motor car back axle. About 8 h.p. was transmitted, as near as could be calculated.

A few details with regard to weight and manufacturing facilities may be of interest. The weight of the complete experimental gear with casing is 18 lbs., but as every part was purposely made much heavier than necessary the finished article should not exceed 10 lbs. If the gear were manufactured in quantities, Mr. Buch considers that it could be made almost entirely from press work, ground to finished sizes. Even the teeth of the two side gear wheels are of such a shape as to render them suitable for being pressed to a finished size, once the correct tooth form has been determined.

We shall watch with interest its trial on the road, as its advantages in the way of reliability, silence, protection from dust and wet, and the use of three speeds, particularly for passenger work, instinctively attract one to what promises to be a success on motor cycles as well as cars.

A THREE-SEATED SIDECAR.

The sidecar depicted in the above illustration is attached to a 2¾ h.p. F.N. motor bicycle, and is used by Mr. Daniel Crotty, of Dungarvan, Co. Waterford. Altogether four passengers are carried and their combined weight is 32 stones. The combination attains a speed of eighteen miles an hour, the little engine being geared 6½ to 1.

OCCASIONAL COMMENTS.

By "IXION."

Detachable Two-speed Gears.

Inspection of a particularly up-to-date machine suggests a further refinement in the region of variable gears. The counter-shaft position is regarded by many as the ideal location of a two-speed gear, therefore why should not more designers aim at supplying machines with detachable two-speed gears? The fortunate rider could then own two machines in one, removing his gear for gentle riding in an easy country near at hand, and fitting the gear to cope with the exactions of a holiday tour in those mountainous regions where the real scenery lies, or for the arduous exertions of an English or Scottish Six Days.

Weatherproof Magnetos.

When will the trade as a whole recognise the pressing urgency of protecting the terminals of the magneto? Several firms make special provision for keeping wet and mud from these vital parts, but I heard last week of a tolerably expert riding spending two hours on a journey of half a dozen miles, and the exclusive reason was that muddy water had drenched the magneto terminals on a machine to which he was a stranger. It is absurd to continue to deliver machines which are at the mercy of a heavy shower. The negligence is the more unpardonable when one muses on the simplicity of making a magneto absolutely weatherproof.

Transmission Control Levers

It is an unquestionable fact that the majority of motor bicycles sustain one or two falls per annum on an average, though not necessarily with the engine working and the rider in the saddle.

If proof of this statement is required, I need only point to the condition of the machines at the end of the English or Scottish Six Days' Trials, when the majority of the cycles show evidence of a tumble, in spite of the fact that the riders are all expert, and that the ride has lasted less than a week. This being so, it is plainly a bad policy to mount important control levers in such vulnerable positions as the footrests afford. My machines have the control of their variable gears and free engines carried on the footrests or footboards. In the past the brake pedals were liable to damage in this way, but of late years many makers have mounted these pedals on separate lugs, so that the brake is not put out of action even by a heavy fall.

At present progress has not included gear or clutch pedals in its scope, and as every repair works foreman knows, these details are very frequently damaged. This point needs instant attention in the designing shops, and will not receive it unless the amateur owner makes a fuss.

Such mishaps are not regarded very seriously at the factory, for if a tester buckles up such a control gear, he is within easy and immediate access of the store room, and no fancy price has to be paid for any new parts. The position of a distant private owner, not too heavily burdened with cash, is very different.

I see three possible lines of improvement. The control might be lifted to the handle-bars (as is already done in some instances); it may be urged that the grips are also liable to damage when the machine falls, but as a matter of fact, the long fo rests now common generally save the handle-bars all but exceptionally heavy falls, and if the handle-b is struck a hard blow, it usually twists and saves fittings, as it is only friction-held.

A second plan would be to follow the practi adopted with brake pedals, and transfer these contr to separate lugs, shielded from damage by the footres

A third plan would be to design an entirely n control mounted on the tube below the tank, a operated by the knee of the rider or the inside of thigh. Such a control will demand some thinking o and would have to be adjustable for length; but will possess the very real advantage of being absolut invulnerable in the event of a fall.

Automatic Carburetters.

We have not heard very much of automatic c buretters lately, for which I am sorry, as I think failu to obtain the best results out of a sensitive two-le carburetter is the reason why some of the less cle amateurs find their machines unsatisfactory from hill-climbing point of view.

Let me cite a personal experience, to show what lot there is in driving. I once owned—way back the dim and misty past—a 2½ h.p. single-gear tricar with a two-lever carburetter (of the surface typ I frequently had to coax that outfit up a long gradi averaging perhaps 1 in 16. When the machine w new to me I could not climb it with the chair emp and with a passenger on board I invariably stuck the bottom pitch. After a time I began to romp ri up without pedalling with the chair empty, and bef long I was able to make a sure ascent every time w the chair occupied, though if the conditions w against me, I sometimes had to put in a little pedalli

I let most of my friends essay the task repeate on various occasions, but not one of them ever halfway up with a passenger; indeed I can o remember one solo ascent with a stranger driving, a he had to pedal like sin. The whole thing lay in management of the air lever, and I fancy some of modern spray carburetters are almost as sensitive the old surface.

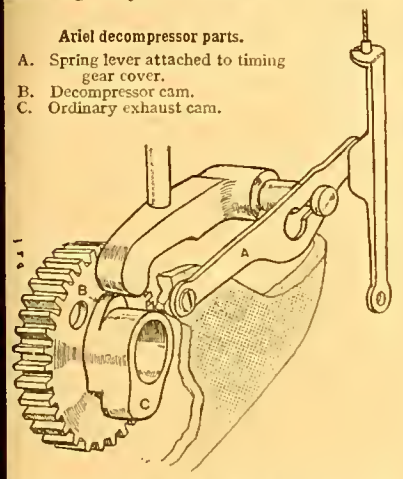
I dare not assert that it is possible to produce automatic carburetter which shall give quite such g results as a two-lever type in skilled hands, but I emphatically assert that in many instances, particula in the case of novice riders, better results would obtained from the employment of a carburetter c trolled by a single lever.

In the meantime, here is a tip. The owner wh informed by his poor performances on hills that muddles the control of his extra air inlet should m a practice of attacking steep hills with his cut- open, and listen to the beat of his engine very ca fully. It is much easier to trace the effect of e adjustment of the lever upon the engine when bark of the engine is not muffled. If magneto igni were as sensitive to lever position as the old accu lator ignitions were, I fancy some of our novice rid of to-day would never get up such hills as Sunris at all.

The Ariel and its Decompressor.

A CLAIM that the 3½ h.p. Ariel with half compression device can be started in its own length must have caused much speculation among motor cyclists. That can be substantiated in practice we are now able to assure all and sundry, having had a week's experience of one these mounts. Our trial has left us wondering why on earth such a device

Ariel decompressor parts.
A. Spring lever attached to timing gear cover.
B. Decompressor cam.
C. Ordinary exhaust cam.



s not become more general on high mpression motor cycle engines, but is much we know, once the extra con-nience and the utility of decompressors e more generally appreciated, they ll be universal. The decompressor ing the chief feature of the machine e are about to describe, we will first al with its construction and the vantages which it imparts, compared tu an ordinary type of engine having method of partially releasing com-ession.

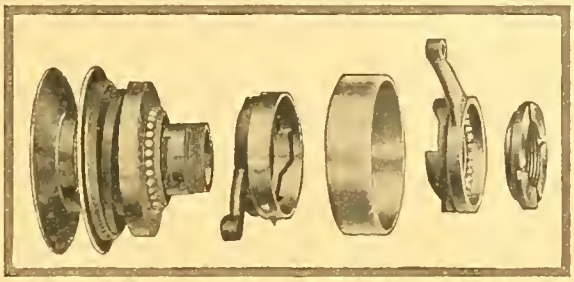
In the sketch it will be seen that a uble cam is formed on the exhaust

The special valve lifter lever and half compression trigger A.

lve timing wheel, the contours of the ms being irregular. C is the ordinary m, giving the full amount of lift; B the decompressing cam, which, being the opposite side to cam C, comes into tion on the compression stroke, tually, in fact, the moment before the ston reaches the limit of its upward avel. The decompressor cam gives but lf the lift of cam C, and so only rtially releases the compression, suf-ient, in reality, to prevent the engine om skidding the back wheel.

Easy to Walk Alongside.

It is the simplest thing in the world to walk alongside with the engine emitting a soft and gentle explosion and



The variable pulley gear and free engine parts dismantled.

hop into the saddle leisurely. Lowering the gear ratio to enable the engine to pick up speed, the exhaust valve lifter lever is, contrary to usual practice, raised and held in a midway position by the trigger A. Raising the valve lifter lever has the effect of raising the spring lever A and so causing the exhaust tappet to slide directly over cam C, when the engine at once picks up speed and runs in its normal state. Further raising the valve lifter lever releases the compression entirely. We can quite imagine that, were the advantages of decompressors better known, T.T. pedalless mounts would be far more numerous.

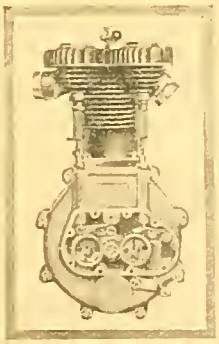
General Equipment.

Turning now to the general equipment of the machine, the Ariel engine is made throughout in the Components works; it measures 85 × 85 mm., has a ball-bearing crankshaft, and the valves are situated widely apart, enabling an exceptionally large cooling surface for the cylinder head. The radiator fins are cast diagonally. The Ariel is one of the few air-cooled engines with adjustable tappets. The balance of the engine impressed us very much, and we could not name an engine we consider superior to it in this respect.

The variable pulley is operated by an extra handle attached to the left bar, and its construction is rendered clear by the illustration of the parts dissected. It will be seen how few parts the pulley comprises. A jockey pulley is found unnecessary with this gear, the spring-supported pulley flange enabling a firm grip of the belt.

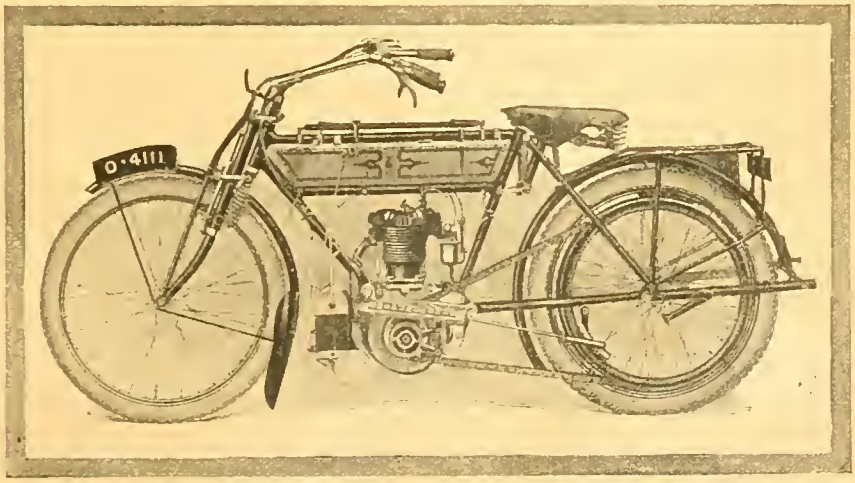
The Rider's Comfort.

The comfort of the rider has been well studied. The spring-suspended saddle is a model of neatness, and it is as effective as it is neat, and the Druid forks are well able to speak for themselves. Detail refinements include a papier maché cover for the Simms magneto, rubber-studded aluminium footplates, and a pedal cut out to the silencer.



3½ h.p. Ariel engine with valve gear cover removed.

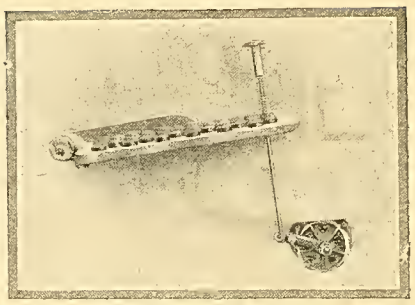
The Ariel can be placed in the very front rank of hill climbing and speed machines; neither of these qualities we found lacking in the slightest respect during our brief trial. The braking power is ample; the comfort we have already referred to including almost perfect engine balance, and in only one respect can we offer criticism, and that is the position of the footplates. They are placed slightly higher than on the average mount, and might well be an inch or two lower. We found that our knees were liable to foul the handles when turning in the width of the road, which it is possible to do with the



Standard 3½ h.p. Ariel with variable gear and free engine pulley.

The Ariel and its Decompressor.—

engine firing regularly, thanks to the decompressing device. The half compression system, it should be added, is not only advantageous at starting, but also in traffic-congested areas, as, of course, it is possible for the engine to fire much more slowly than with full compression. Every rider knows that an engine with a low compression ratio can be induced to run much more slowly than a high compression engine, likewise an engine which has fallen off in power and on which the valves and joints are a poor fit, is more likely to win a slow race. It is, therefore, easy to understand what effect a mechanical decompressor has.



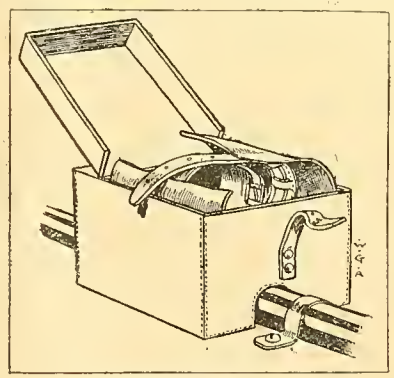
Rubber-studded footplates and "push-down" lever operating silencer cut-out.

Such devices are largely used on cars t assist in starting by the handl We have heard the question aske whether the partial raising of the valv has any deleterious effect on the valv seatings, but the reply is that, on th contrary, it has a beneficial effect, as th rush of cold gas past the valve when th decompressor partially releases the pre sure cannot but prolong its effective lif This seems a perfectly reasonable view Ariel motor cycles are obtainable in thre different models—the variable gear pa tern, the same machine with pedals an single gear, and a T.T. machine. Th latter will be ridden in the race on Ju 3rd.

AMONG THE ACCESSORIES.

Up to Date Equipment.

Messrs Hunts' Stores, now installed in new premises at 117, Long Acre, which are far more commodious than the old ones, being more spacious and better lighted, have introduced several novelties which will especially appeal to our readers. In the first place, we may mention a motor cycle coat, specially designed to exclude the most drenching rain. It has been found that with the old pattern double-breasted coats the wet would drive in at the places where the coat buttoned over, and especially at the top. In the coat under consideration glove button fasteners take the place of buttons, so that the rider need not take his gloves off to fasten up the coat. At the top of the double-breasted portion, where rain is most likely to drive, there is a flap which buttons over and totally prevents this unpleasant contingency resulting. The opening of the coat is so cut away that there is no



Hunt's Stores top-tube tool-bag

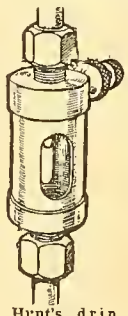
possibility of the wet driving in. Outside pockets are supplied with a flap which buttons over with glove button fasteners.

As regards complete machine attachments, a number of Douglas motor cycles and numerous Millford sidecars fitted with various types of bodies are to be seen in Messrs. Hunts' Stores showroom.

Another practical accessory is an armoured lamp connection, which cannot kink and will not perish like indiarubber.

We were also shown several new tool bags, one of which is supplied with a tool roll, and is designed to clip on to the top tube of the frame, and is provided with a special bracket so as to ensure it being fastened securely. Besides the tool roll there is room for a spare inner tube.

Yet another interesting bag is one which is designed to be attached underneath the carrier and contains a drawer; while a third pattern is designed to be attached to either side of the carrier, pannier fashion. Another useful accessory is a drip feed lubricator, working by gravity, with an external milled nut to control the drips.

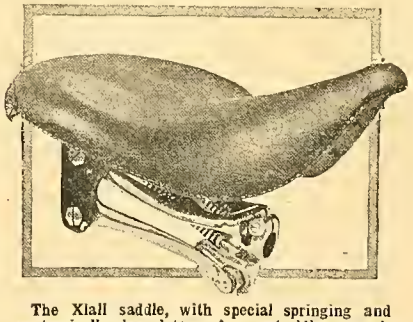


Hunt's drip feed lubricator.

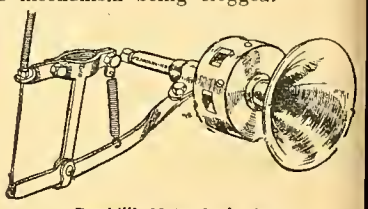
Other items which will appeal to our readers are an inexpensive footrest and a good belt drill, which is better for the belt than the ordinary kind of punch.

A Siren for Motor Cycles.

Those who want something louder, more piercing, and with better road-clearing properties than an ordinary horn should inspect Dunhill's latest motor cycle siren, which is illustrated herewith. The apparatus, which is neatly and strongly made, and is nickel-plated, is fixed to the front forks, and is provided with a hinge whereby with a Bowden wire the fibre friction spindle can be brought into contact with the tread of the front tyre. The sound produced by this instrument is not exactly unpleasant, but it is nevertheless a sound which demands—and gets—attention from road users. The shaft of the siren runs on ball bearings, and the horn is provided with a diaphragm of fine gauze to keep o dust, a refinement which should preve the mechanism being clogged.



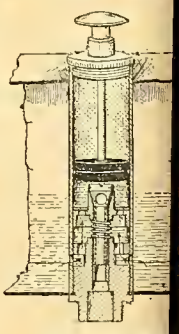
The Xlall saddle, with special springing and anatomically-shaped top. A recent riding experience with one of these saddles has demonstrated that it is extremely comfortable.



Dunhill's Motor Cycle Siren.

Rex Lubricating Oil Pump.

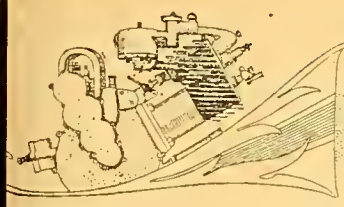
The lubricating oil pump supplied the Rex motor cycles is of the tapl variety, and is, of course, fitted inside t tank. When the plunger is raised t oil enters from the main compartment the tank and follows the arrows, lifting the non-return flap valve. On depressing the plunger the flap valve prevents oil returning to the tank, and it flows through the hole in the centre of the valve stem. To allow this the pressure of the oil when the plunger is depressed forces the conical seating downwards, so uncovering the hole in the central stem. When the pressure is released the cone seating returned to its original position by t coil spring, and seals the oil delivery ho thereby preventing any leakage to t engine unless the pump plunger is op ated.



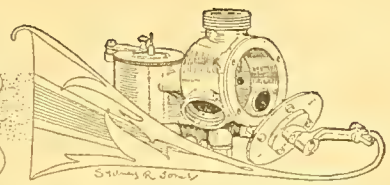
Section of the Rex oil pump.

"The Motor Cycle" Cubical Capacity Table.

We have still a few of *The Mo Cycle* cubical capacity tables remain in stock, and shall be glad to forwa one to any reader who sends 6d. to t publishing offices, 20, Tudor Stre E.C., to defray cost of packing a postage. The table is printed on s cardboard, eyeleted, and corded hanging up, or on thinner card fold for those who wish to have it in easily portable form.



QUESTIONS & REPLIES



A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

A Legal Query.

Will you please tell me if my driver's licence can be legally endorsed for neglecting to take out an Inland Revenue licence for my motor ycle?—R.B.

licence is not only liable to be en-sed for offences under the 1903 Act, also for any offence in connection h the driving of a motor cycle. It however, very doubtful whether a ver's licence ought to be endorsed anse the owner has neglected to take a Local Taxation licence. The ficulty is that if you refuse to pro-e your licence for endorsement you l be liable to have another sum-ns issued against you.

Tight Joints. Rusty Cylinders.

(1.) Could you tell me of any composition which will prevent sparking plug, etc., becoming too tight and difficult to undo? (2.) Also is here any method of keeping the ylinders black without overheating?—R.D.W

No, we know of no composition ich will prevent a sparking plug m becoming too tight in the cylin-. This trouble is due solely to the t that the thread in the cylinder nts easing with a standard spark-plug tap. Squirting paraffin l a little lubricating oil around the nt should assist in its removal when ired. (2.) Yes, you might try diolene for rusty cylinders, sold by ssrs. Bowen and Odery, 62, New os Road, S.E.

Air v. Water-cooled Engines.

I am building a light quad-car. Do you consider air-cooled engines reliable and suitable for a four-wheeler, or should I add the extra weight nd put a water-cooled one in? I hink my car will weigh about 4 wts. with the former type installed. I am told on all sides that air-cooled ylinders are not even a success on ricycles, so I am to expect even less when enclosed in a bonnet.—A.C.J.

be a success, an air-cooled engine st be specially designed for a light ree-speed passenger machine If u do not grudge the extra weight, a ter-cooled engine is immeasurably perior. The engine will run thousands miles without having to be taken wn and cleaned, will wear much tter, and will not knock on hills

Which Wheel Lifts?

To settle a controversy kindly say which wheel lifts of a car or sidecar in going round a corner too sharply. Some maintain in going round, say, a left hand corner that the near side wheel lifts, others that the offside one does. What is the opinion of others? I should like to see this query answered authoritatively, as friends of mine are prepared to back any amount on their theory. What is the experience of long-distance sidecarists?—P 1300.

The controversy is a very old one, but it can be said authoritatively that in turning a corner too sharply with a four-wheeled vehicle, the centrifugal force causes the inside wheels to lift. The same thing happens in the case of a tricycle. With sidecars there may be a slight amount of doubt as to what happens, but our experience is this: With a sidecar attachment either on the left or right hand side of the bicycle, the sidecar wheel, having the least weight on it, leaves the ground if the corner be taken too quickly, no matter whether the turning is to the right or left. We would like to see this view confirmed, or otherwise, by an experienced sidecarist who has tried both left and right hand sidecar attachments.

Motor Tricycles.

Kindly inform me of the name and address of the firm who were showing a motor tricycle at the 1909 Stanley Show; it had a single driving wheel behind and two front steering wheels, and was, I believe, shaft-driven and had two speeds. Failing the above, the name of any firm who are building a reliable motor tricycle, or who make a double front wheel attachment to fit an ordinary motor bicycle.—E.W.

The tricycle you refer to is probably the F.N., sold by the F.N. Motor Agency, 106, Great Portland Street, W. There is also the Morgan Runabout, made by Messrs. Morgan and Co., Malvern, which is a rather more expensive vehicle of the single-seated tricycle type. A two-wheeled steering attachment is sold by W. E. Manning.

1911 A SIDECAR YEAR.

We recently referred to the large increase in the number of sidecars on the road. The above snapshot of a party of Manchester sidecarists helps to bear out our statement. It was taken on Bucklow Hill last week.

Defects in Magneto.

I shall be obliged if you can throw some light on the following curious phenomena. (1.) A short time ago I was troubled with stoppages every mile or so, machine restarting after waiting a minute or two. Carburetter was in perfect order and received plenty of petrol. I had magneto contact breaker to pieces and renewed one or two worn parts, and machine then went well for about a fortnight. Then I experienced exactly the same thing. Machine runs perfectly for about a mile or a little more, then without any warning stops firing altogether. It will restart after waiting two or three minutes without any trouble and go for a further mile or so. It is particularly noticeable uphill, and I may say it has puzzled our local man. (2.) Is it possible and practicable to run with a Hellesen or Siemens Obach dry battery in conjunction with my magneto and coil for easy starting?—C.E.T.

(1.) Symptoms such as you describe might be caused by water in the tank or in the bottom of the carburetter below the jet. The trouble with water is that when the jet is held up to the light it looks perfectly clear, the bead of water being transparent, but it effectually blocks the orifice. It seems to be more likely, however, that the trouble is electrical, as after the magneto had been overhauled the machine ran better. Of course, the trouble might possibly be due to a defective insulation or to a cracked vulcanite washer. (2.) If you intend to use a dry battery or accumulator in conjunction with the Eisemann magneto, it will be advisable for you to write to the United Motor Industries, Ltd., 45-46, Poland Street, W., who will supply you with a special fitting for attachment to the contact breaker. With this addition it is possible to employ a battery, in conjunction with the coil fitted to the old type Eisemann, for easy starting.

Miss Mollie Morris, of Malvern, and her Motosacoche, which she finds she can start and stop as easily as a pedal cycle, and thinks that for both town and country there is no more useful machine. She is delighted with the way in which it goes uphill, and says she feels sure that if ladies only tried the Motosacoche as many lady motor cyclists would be seen as men.

Registering a Heavy Tricar.

I should be glad if you would instruct me in registering a 7-cwt. tricar. (1.) Must it be registered as a car? (2.) Having only three wheels, will it be legal if I get a motor cycle licence? (3.) As it has not been on the road yet, am I liable for the Inland Revenue licence?—G.W.

(1.) As the tricar weighs 7 cwts. you must register it as a car—3 cwts. is the limit for a motor cycle—but (2) as it has not more than three wheels it is a motor tricycle as far as the local taxation licence is concerned, and only liable to a tax of £1. (3.) licence should not be necessary u the machine is actually used on road, but as you are going to use this year it would be better to t out the licence without delay and save any bother.

READERS' REPLIES.

Magneto Suddenly Ceases Firing.

In addition to the explanation alre given "P.F." respecting the failure Bosch magneto 1909 pattern, we wo further advise the switch for cutt out the magneto ignition to be examin also the cable leading from this swi to the short-circuiting terminal on magneto. If the switch itself sho have gone wrong on account of dar ness or water, or if the cable is in a way damaged, and at the same ti touching the motor at any point, t would cause a short circuit. easiest method of finding out if switch is at fault is to disconnect cable leading to the same, when, course, the magneto should at o work if the fault has in any way b connected with the switch or the ca leading to the same. Further, high-tension cable should be examin in a similar manner to see that connection has not come loose eit on the plug or the magneto, also t the insulation has not perished, esp ally at such a point where the ca may be near the cylinder, or actua touching it.—THE BOSCH MAGNE CO., LTD.

EXPERIENCES WANTED.

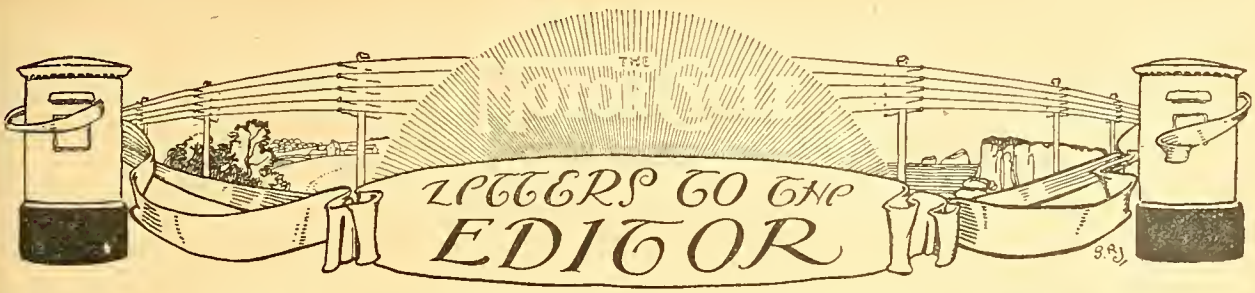
Readers desirous of obtaining the experie of others with various motor cycles or accesso must enclose a stamped addressed envelope which the replies may be forwarded. Ans to the queries below should be addressed The Editor.

"E.O.R." (Madura). The Wall Au Wheel.

"F.J.W." (Denver, S.A.). T.A for use with sidecar.

"Shotton," the writer of a po card, must observe our printed rul

First 1911 meeting of the Manchester Motor Club at Lower Peover, Cheshire.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address

Best English and American Times.

[5510.]—The suggestions by Air Springs, Ltd., appearing in the last issue of *The Motor Cycle* are really too absurd to be taken seriously, and my only reply to them is that there are other features about the Indian motor cycle besides the engine which are conducive to high speed.

To your contributor "S.A." I would suggest that he read my letter published in *The Motor Cycle* of March 23rd over again very carefully, as his remarks are not to the point. I also think he will fail to find that Mr. C. R. Collier has ever been officially timed for a full lap at Brooklands at a speed of much over 70 miles an hour.

OLIVER C. GODFREY.

Crown Ash Hill, opposite the Salt Box.

[5511.]—As one interested in motor cycles and a rider of cycles for many years, I read with interest the accounts of a new test hill named the Salt Box. This hill has been known for years—in fact, in the first A.C.C. annual trials about six of the competitors lost their way and had to face it. This happened in 1903; the horse power of motor cycles then being about 2½, you can appreciate our decision upon arrival at the top to re-name this hill the Pepper Box.

I was at that time riding a 2¼ h.p. Kerry, and I remember that the hill at that time was in a very wet condition and exceedingly narrow in places, and I consider that a great deal of skill as well as power would be required to negotiate it. It would be interesting to know how many on that occasion had to face it and also to know their experiences.

W. HAYES.

What is a Lightweight?

[5512.]—I was, indeed, pleased to read "Ixion's" article "What is a Lightweight" in last week's issue of your paper; it is good to know that such an able exponent has taken up this subject, and I hope that he will show the ruling authorities reason before he finishes with the subject.

The regulations for the Lightweight T.T. are ridiculous in the extreme. Here is a race for "lightweights" with absolutely no weight restrictions; moreover, it is stated that machines will not be weighed! The reasons for same are very obvious. The A.C.U. must surely know that a single-cylinder engine of 300 c.c. fitted to a cycle which must be built strong and heavy enough to be safe for the speed of such an engine, and fitted with tyres and mudguards as per its regulations, cannot make a lightweight, i.e., a machine of about 100 lbs.

Anyone can make a freak engine, but I always understood that the A.C.U.'s prime object was to "out" such machines and to improve the design and breed of motor cycles. Will the A.C.U. state what their ideas really are—if it can?

I would like to see the A.C.U. start a light motor cycle factory—its productions would be interesting, and they would then realise why some manufacturers make genuine, honest lightweights.

The summary of the T.T. regulations shows even more fully the absurdity of the "lightweight" regulations. The lightweight machine tyres are only ½in. smaller than senior machines; the lightweight machine mudguards are only ½in. smaller than senior machines.

Further comment is needless, but I hope "Ixion" will succeed in exposing this nonsense.

OSBORNE L. DE LISSA.

A Useful Hint.

[5513.]—As I have recently had some mysterious stoppages on my motor cycle during wet weather, perhaps the cause of them may be of interest to some of my fellow readers. What happens is this. On stopping I find that there is no petrol in the carburetter. I first thought that I had run out of petrol. However, this was not so. I next turned my attention to the petrol pipe, which I thought was stopped up. This proved to be all right. I then found that the petrol could not get out of the tank through there being a partial vacuum inside, caused by wet getting on the top of the filler caps and sealing up the vent hole. The cap is fitted with a pin to prevent the petrol splashing out. On removal of this everything was all right.

DX 475.

An Amateur's Design of Gear-driven Motor Cycle.

[5514.]—Concerning Mr. Hirschfeld's design [letter 5462] he claims low centre of gravity, low riding position and wheel steering as advantages. Having patented the design, it is natural to suppose it is drawn to scale or very nearly so. First, the petrol tank is at least 4in. higher than usual, also the engine. Therefore the centre of gravity is greatly raised, and the machine will be liable to skid. The riding position is obviously no lower than usual. Wheel steering has been tried and abandoned. The rear springs allow side play of the back wheel. A great improvement would be to under-sling the rear part of the frame, and so get a very much lower and safer machine. But, barring these one or two details, the idea is excellent.

ELSIE.

Horse-power Rating.

[5515.]—In your issue of the 23rd ult. you publish a letter [5485] on horse-power rating from a correspondent who suggests another name for the power rating of petrol engines.

It must be admitted that the present term has caused much dissatisfaction, but such is only the case with petrol engines, the name horse-power being quite good enough for any other form of motive power, whether generated by steam, gas, electricity, or water, and conveying all the information required to power users, upon which to base their calculations when requiring a power unit to perform certain work.

It was first made and used to determine the power rating of the slide valve steam engine, and since that time all other kinds of motive power (except petrol) have been made to conform to the standard of 33,000 foot-pounds per minute, and if a machine required 10 indicated horse-power to drive it by steam, any good make of electric motor or gas engine of that power would drive it equally well.

That the same cannot be said of petrol engines is the cause of all the dissatisfaction which prevails, and it is only in the columns of motor journals where the controversy exists, being unknown in other forms of engineering. What satisfaction it gives to builders of petrol engines to rate them at about four times more than they are capable of doing is best known to themselves, but I feel sure that this gross exaggeration is responsible to some extent for the now excessive car tax. I suggest as an alternative that petrol engine makers give their engines an eight hours' continuous run with dynamo driving load, note the watts current generated, discount 25% for efficiency loss which will occur through wear, and divide by 746, the result being the normal horse-power of the engine, and we might then get the petrol motor to justify the horse-power it was named.

FRANCIS J. CLAYTON.

Experiences with a Lightweight.

[5516.]—I have read with interest letter No. 5469, March 16th, from Mr. Geo. Carpenter, jun., respecting his N.S.U. lightweight. I have a 1¾ h.p. N.S.U. exactly the same as illustrated except the spring forks, but cannot get anything like such good results.

Firstly (like his) my engine is fitted with a separate combustion head, but it occasionally works loose, thus resulting in loss of compression. I should like to know if Mr. Carpenter has experienced the same trouble, and if so, how he has cured it?

Secondly, my petrol consumption seems excessive (about forty miles on half a gallon). Possibly this is through having to drive "all out" owing to poor compression.

Thirdly, can the Whittle belt be fitted without alteration to the frame? My back stays do not appear to be wide enough to allow a wider belt rim to be fitted.

I may say the piston has recently had new rings fitted, and the carbon deposit removed, and while the combustion head remains tight I find the machine fast and a good climber.

I should be much obliged if Mr. Carpenter could give us his experience. H. F. SPARRICK.

The Lady Motor Cyclist.

[5517.]—I have read Mr. O. L. De Lissa's letter [No. 5506] in last week's issue of *The Motor Cycle*. I am quite agreeable to this gentleman, as a manufacturer, having his opinion as to what is the ideal mount for a lady.

As Mr. De Lissa is interested solely in the sale of lightweight machines, I think it is certainly bad taste on his part to dictate to me as to what is *the* most suitable machine for a lady, especially considering the fact that I have had considerable experience with lightweight machines.

With regard to his remark that the lightweight motor cycle—oh! elusive term—is quite able to climb the stiffest hills with reserve power, again I repeat that I am quite able to judge. Is the reserve power to which he refers designated by that still more elusive term l.p.a? I've had some, Mr. De Lissa!

Now as to the shopping, starting without assistance, control in thick traffic and marks of oil or grease on one's dress after months of riding, I did not buy my machine to go shopping on, but with my silent engine and free engine clutch I very much doubt if a lightweight could give me any points here. I have yet to find it necessary to ask for assistance in starting, and as for traffic riding I glory in it for reasons stated above.

Grease and oil on one's clothes remind me of a rider of a very well-known lightweight machine I saw finish in a reliability trial last year. The said rider and his machine would have made a fitting advertisement for one of the leading oil companies, such was his disgraceful condition.

My experience with my present type of mount is that after a 100 mile run the engine, and in fact the whole of the machine, is as free from oil as when I started.

As to my recommending heavyweight machines for ladies. If Mr. De Lissa styles a machine of 140 lbs. a heavyweight, I certainly recommend it in preference to a machine the engine of which is always roaring round at a terrific speed, with consequent vibration, noise, and lack of that sweet silent glide of the medium weight.

"Fancy ladies riding a machine which they cannot lift on to its stand, which they can barely hold up on an even keel, and if it fell over they would be unable to lift it back again. It is too laughable." I agree. Such a lady requires to be wheeled about in a bath chair and not to ride a motor cycle.

I thank Mr. De Lissa for assuring me that I shall eventually come into line with his one-sided opinion. I notice he is already coming into line with my own humble opinion by introducing a more powerful machine for this season. Can I look forward to the 3½ h.p. machine bearing his firm's name next season? (Miss) LOTTIE BEREND.

[5518.]—Having read Miss Berend's article in your paper and Mr. De Lissa's comments on it, I thought I should like to send you my opinion on the subject.

Last year I rode a 1910 single-cylinder lightweight and found it very satisfactory on the level, but when it came to the hills it required too much pedal assistance to please me. After a little persuasion my husband bought me a 3½ h.p. Midget Bicar, open frame, with free engine and two speeds. I find it quite as easy to start and no trouble to control in traffic, and far more comfortable to ride than the lightweight, and above all I can keep up with my husband on any hills we come across. I do not find it in the least cumbersome, and when I wish to place it on the stand I do not have to lift it at all; simply pull backwards on to its spring stand which is placed underneath. Another great advantage is its great stability under all road conditions. I have ridden it continuously for the last four months, and have not had a single skid or side-slip. I quite agree with Miss Berend, and would not go back to a lightweight again.

Hoping to see other lady riders' opinions in your valuable paper. (Mrs.) A. MORRIS.

The Motor Cycle in West Australia.

[5519.]—Having now read your valuable paper for some time, and seeing correspondents from various quarters writing to you, I thought that perhaps a line from the Wild West would be of interest.

I might say, in passing, your paper is practically the only light thrown on us from the other side of the world with regard to the pastime. From it we learn of new makes of machines, records established, and current arguments.

Our motor cycling is going ahead; new motors are here and you can now see Rex, Scott, Wilkinson T.A.C. (if you please), Triumph, N.S.U., and F.N.'s sporting themselves over the dusty roads.

There is no club in this state, nor are there any regular competitions, the above machines being almost solely used by travellers who journey thousands of miles, and when we see motor cyclists—men who live in the saddle—going on a trip which perhaps takes them 100 miles in the bush from any railway, it speaks well for the trustiness of modern motor-power.

Much has been said about suitability of various methods of transmission for the colonies, and also other remarks on build of same. Perhaps coming from a practical motor cyclist and long-distance traveller these comments may be of some guide.

Our climate is not an exact extremity; we never have snow or ice—just fairly cold with copious rains in winter (May—October), and, of course, rather hot at times in summer, according to the portion of State. Rubber cracks and soon perishes, therefore belts suffer; tyres usually wear out before they have time to perish. Very likely your English goods are in store some time before being sent on, as I have just worn a new back tyre through in 500 miles.

Our roads are not to be compared with yours (by all accounts). If we get ten miles of fairly smooth road in the state we do well. Dusty, stony, holey, and sandy. Engines fitted very low are useless, although a careful rider, of course, may never hit anything in daylight. Hilly roads with sandy patches make a free engine and two-speed gear well nigh a necessity. Travellers are being prejudiced to single gears, as starting on hills exhausts them and they are unfit for work afterwards. Some form of rear spring is necessary for comfort. Sidecars will not attract here. Present prices of machines are Triumph £70, Phelon and Moore £80, N.S.U. £65, Moto-Rêve £55, and Scott £85. So you see we are kept back by twenty-five per cent. duty; otherwise heavy sales would be effected. Petrol costs 1s. per gallon, and lubricating oil 4s. 6d. Licence 5s. per annum only, and we enjoy a glorious freedom. Police are good fellows all, and very little is ever said to reasonable speed through cities, with the result that accidents are rare. My own machine—a 3½ h.p. Rex Tourist—is a very good type of cycle, and has shown clear heels to almost all of its type in impromptu hill-climbing. Our local hill is Mount Street, gradients 1-5, 1-4, and 1-3 near top.

Wishing you all success, CLIFFORD LLOYD.

Perth, Western Australia.

The Motor Cycle Steamer.

[5520.]—I think "W.G.A." in his article "The Motor Cycle Steamer," page 174, February 16th, and subsequent correspondents do not realise the disadvantages of steam. In his article "W.G.A." mentions nothing about the condenser. With the generator he suggests using "small water tubes" the feed water will have to be regulated (to avoid prim

constantly; in fact, continually, with every move of the main steam throttle (of course, this would be chief control for speed), as the small capacity of the generator will allow of no storage of water or steam, so that it requires very fine regulation of water to avoid burning out tubes, or priming the engine on partly closing the throttle.

Again, he will have to have a very fine adjustment valve on petrol feed to the burner. (Of course, this is under pressure at about 40 lbs. to the square inch to get good results.) This valve will regulate the "fire," so this again will want careful regulating ("on shutting or opening steam" throttle) to keep up correct pressure and temperature of steam. I presume the pressure for normal running would be about 500 lbs. to the square inch superheated.

Of course, "W.G.A." knows that if fire is on too far in advance of the water entering generator steam will over superheat and so seize up engine very quickly. He will admit that the average rider of motor cycles would not like to have these three controls to operate after the throttle and air of the petrol motor, as if you shut the throttle and stop on the latter type of motor cycle nothing happens, but if you did the same quickly on a steam-propelled motor cycle and forgot to close down the fire something might happen, and cost probably you would have to buy a new generator.

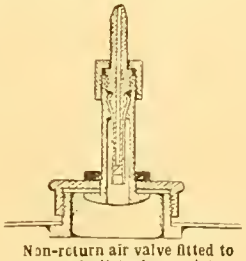
Then there is the condenser. This requires another pump to force the condensed water back into the tank and keep up partial vacuum in the condenser itself, it is not very efficient without. There is no mention of a feed water heater. Unless you have these things the machine will be very wasteful in fuel, "even more than 'W.G.A.' expects." Of course, these additions could be fitted, but would the machine be a useful or practical one if they were added.

The trouble of the control above mentioned can be avoided by using special automatics. A water regulator in main water feed pipes to by-pass water at certain pressure of steam, a flow motor in the same to regulate the fire valve in exact proportion to water passing to the generator, and a thermostat in the main steam pipe to act beyond a certain temperature and admit more water to balance this.

These are costly things to make, and have to be solidly made to stand pressure, and would weigh a good deal, but if fitted (if it is possible to get them on the machine after all the other things) would bring the control down to the steam throttle only, and the machine could then be driven by anybody. But what would be the cost and the weight of such a machine? Can "W.G.A." inform us? RYDER.

Pressure Feed to Oil Pump.

[5521.]—I am forwarding herewith a sketch of a small attachment I have on my 3½ h.p. Rex. Those of your readers who, like myself, prefer to use an air-cooled cylinder oil all the year round, and who have experienced difficulty in making their pumps draw oil from the tank in winter, may find it of some benefit. As you will see, it is simply a Dunlop tyre valve fitted to the stopper of the oil compartment. In excessively cold weather I pump up a good pressure before starting out on a journey, and the pressure will then force the oil into the pump without further trouble. I can usually get about three or four pumpfuls before having the inflator again.



Non-return air valve fitted to stopper of oil tank (see letter 5521.)

It is, of course, essential to have a good fit between the stopper and tank. When the pump is fully charged with oil the three-way cock should be turned away from the tank, otherwise the oil is liable to be forced past the plunger washers and through the gland, and so down the outside of the machine, spoiling the appearance and making it dirty to handle.

Care should be taken not to create enough pressure to force in the oil compartment in the tank.

R. M. POLLARD.

Racing at Brooklands.

[5522.]—In reply to the reasonable criticisms offered by Mr. Woodman in the last issue, with reference to the "scoring" at the B.M.C.R.C. March meeting at Brooklands, and the title of one of the races in the programme of that meeting, may I be permitted to say that both these points had the careful consideration of my committee?

The lap scoring board, as devised by one of our committee, is an ideal arrangement for informing the public of the progress of each of the competitors in a long distance event, provided, of course, that volunteers are forthcoming to work the board. These were conspicuous by their absence at the meeting in question; but, to prevent this happening again, and to encourage visitors to assist us, may I say that I shall be pleased to hear from anyone interested in motor cycle racing who is willing to lap score at our future meetings. Any gentleman accepted for this by no means onerous duty will be entitled to free admission.

As to the prompt declaration of final results, I would remind your readers that the conditions governing the majority of the races held by my club necessitate accurate and involved time-keeping, and it is absolutely impossible for results to be declared until a mass of figures have been checked.

The one hour Tourist Trophy races are promoted with a view to providing practice for prospective competitors in the Isle of Man, and to enable manufacturers to test various machines, adjustments, etc., before the big race. It is generally admitted that the T.T. races served these purposes well last year, and are consequently being repeated this season. Mr. Woodman's suggested name expresses exactly what the races are—the official title chosen is simply an abbreviated form of the same thing.

THE BRITISH MOTOR CYCLE RACING CLUB.
T. W. LOUGHBOROUGH, hon. sec.

A Combination Inlet and Exhaust Valve.

[5523.]—I notice in the last issue a description of a very interesting combination valve. The idea, however, is not original, as I find it was protected in May, 1910.

Both systems appear to be rather inviting, but I fear that the lift necessary to uncover the distribution part of the valve is excessive, and the angularity of its profile would be very detrimental to its working. It also appears that at high speeds the valve would be thrown off the cam face unless retained by a very powerful spring.

W. SELLS.

In Search of Steep Hills.

[5524.]—Last week's issue of *The Motor Cycle* on the subject of steep hills puts me in mind of a hill near Leeds which I have never heard of being used as a test hill, although it is far steeper than any other hill I know round here.

I refer to what is known as "The Cutting," between Apperly Bridge and Calverley. At the same time I am not sure whether this is a public highway, but perhaps some of your readers can enlighten me.

Kirkstall. A. S. BRADLEY.

Signalling for Motor Cyclists.

[5525.]—We are indebted to your correspondent "T.E.B.C." for another effort to systematise communication *en route*, and I hope a profitable effort withal. Nevertheless, I would venture a mild criticism and the remedy also.

The left and right turn I would not question owing to the very general acceptance of the signals quoted, which is proof of their being efficacious.

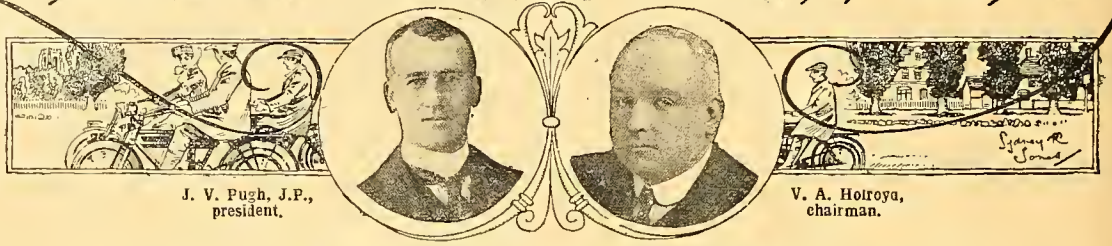
The rather irksome "Caution" signal—Army-Halt—however, might well be replaced by the "quick" march as opposed to the "double" march, the desired effect being the same in both cases, *i.e.*, a decrease in speed of party receiving signal, and a more convenient signal to perform is arrived at. The "quick" is somewhat similar to the M.U. "slowing down," but hand is level with the shoulder, palm to the front, forearm still horizontal and away from the body, but elbow dropped lower.

"T.E.B.C." would also find the following in infantry training: Reinforce—arm extended, swung from rear to front above the shoulder; this would give a clearer signal than the "underarm," which is open to confusion with a mere motion to reach the oil pump or what not.

As these movements are not intended to be carried out with military precision, the last may be made for convenience, with the arm bent, and still be obvious at fifty yards.

H.A.P.

LEADING MOTOR CYCLE CLUBS



J. V. Pugh, J.P., president.

V. A. Holroyd, chairman.

No. 12.—THE COVENTRY AND WARWICKSHIRE M.C.

THIS higbly successful organisation started its career as a motor cycling body in 1904, under the title of the Coventry Motor Cycle Club. The majority of the members, even if not connected with the trade, are very keenly interested in the practical side of motoring. The trade element, however, has not been allowed to have any deleterious effect, and trade rivalry has been conspicuous by its absence.

The club existed as a purely motor cycle organisation for a period of two years, with Colonel Wyley, V.D., as president, Mr. V. A. Holroyd as chairman, Mr. W. Grew as hon. secretary, and Mr. E. J. Hardy as hon. treasurer.

W. Grew, first hon. secretary.

It was decided at the A.G.M. in April, 1906, considerably to extend the scope of the club by promoting open competitions and catering for car members; consequently the name of the club was changed to the Coventry Motor Club, Mr. Eric W. Walford undertaking the duties of hon. secretary.

In its first year the Coventry Club was successful in winning the first team competition promoted by the Motor Cycling Club, and came into further prominence in 1906 by its first open hill-climb for cars, tricars, and motor bicycles, which was held at Newnham. Open events were exceedingly few in those days.

A Successful Gymkhana.

In June of the following year an eminently successful gymkhana for cars and motor cycles was held, which provided the club with a substantial financial balance, and, together with the kudos obtained from that and previous events, this undoubtedly placed the club among the leading provincial organisations. At a later period it was thought advisable further to strengthen and extend the scope of the club, and the name was again altered to the Coventry and Warwickshire Motor Club.

In recognition of their valuable services, about this time Messrs. E. W. Walford and E. J. Hardy were presented with a gold watch and silver tray respectively, Mr. V. Holroyd receiving the R.A.C. associates' medal "in recognition of six years' hard work as chairman."

A Military Motor Reconnaissance in the form of a military scouting manœuvre, with motor cars for the use of the scouts and motor cycles for carrying despatches, proved an interesting and instructive feature. In 1909 and 1910 such events were held, and, moreover, recognised and closely followed by the military authorities. On the last occasion the event was run off in conjunction with the Midland Territorials, and it was felt that some good was done in demonstrating the advantage of the motor cycle for rapid despatch carrying and for the purpose of scouting, and as a proof of the help which motor organisations could afford to the authorities in case of an invasion.

The club has made several attempts to render it compulsory for all road vehicles as well as cattle drovers to carry red warning lights at night—so far without success.

The R.A.C. Visit to Warwickshire.

The visit of the R.A.C. and Associates to Coventry, Warwick, and Leamington, with Prince Alexander of Teck taking the place for the first time of his brother, Prince Francis, marked 1909 as an exceptional year in the club's history.

In 1909 Mr. John V. Pugh, J.P., was elected president in place of Colonel Wyley, who was leaving for Australia, and later Mr. Arthur Wright took over the duties of treasurer.

In that year the Coventry Club for once in a way lost *The Motor Cycle* team trial cup to the M.C.C., having the year previously won the old trophy outright.

The committee have found in actual competition work that more can be done for motor cyclists than for car owners, principally owing to the fact that open motor cycle hill-climbs are still possible.

A. Wright, hon. treasurer.

G. Smith, present hon. sec.

On this account the club has spared effort to ensure its annual open climb being one of the most impor events of its kind, and the fact that the fifth annual hill-climb held at Wille last September a record of 116 en was received proves that its ef were not fruitless. The Coventry has entered for every open inter-club t competition which has taken place conspicuous success. *The Motor C* Fifty-guinea Trophy became the o own property in consequence of three v and is to be competed for among motor cyclist members this year, while a second trophy put up by the M.C.C. to replace the first is also held by the Coventry Club.

E. W. Walford, late hon. secretary

The A.C.U., judging such events to be of practical value, organised a much more severe trial, terming it the Inter-club Championship, and in this also the Coventry Club proved winners. In 1910 competitions, it ma noted, the Coventry Club team men created a record, on three occasions fi ing the course without a stop, earning the title of club champions. aggregate mileage covered in these petitions was 2,166.

The last two annual dinners, hel the historical St. Mary's Hall, proved most successful functions.

This Year's Prospects.

At the last annual general meeting Eric W. Walford relinquished the s taryship, and Mr. Geoffrey Smith, Hertford Street, Coventry, was elect that office. An active programme been arranged for this year, includin amateur *v.* professional event—ov sporting course including 1 in 6 clim a twelve hours' trial, a car hill-c annual Welsh run, open hill-climb, speed-judging contest in combin with the closing run.

The membership of the club is ra swelling, and is now in the n bourhood of 200, the bank ba exceeds £200, and undoubtedly these and the general success of the cl largely due to the energy and enthu of the honorary officials.

Herts. County A.C. Members' Hill-climb.

Twenty-three Competitors take part in a Competition at Kop Hill.

AN excellent afternoon's sport was provided by the Herts County A.C. (motor cycle section) competition last Saturday at Kop Hill, Princes Risborough, about thirty miles from London. The weather was fine, but the surface of the hill was in a shocking condition, being very rutty and covered with loose stones, especially the 1 in 4 portion at the finish.

We should strongly recommend any club which contemplates using this hill for competitions to give the surface some attention, especially the top portion.

Twenty-four members had entered in the various classes, and as some had entered for more than one class there were over seventy ascents.

Great credit is due to the hard working and energetic hon. sec., Mr. C. C. Cooke, for the way in which the arrangements were carried out. Unfortunately he was unable to compete himself owing to his new T.T. Triumph being delayed on the railway.

Quite incidentally we heard that complaints had been made to the local police, by the residents, of several competitors driving through the village at excessive speed, and also riding on the footpaths while returning from the climb. This is regrettable, and, if this kind of practice continues, other clubs will be barred from using Kop Hill for any future competitions.

Fast Climbing.

Some remarkable climbs were witnessed in the different classes, especially in Class 4 (multi-cylinder). S. T. Tessier, jun., on his 5 h.p. T.T. Bat, created a great sensation, ascending the hill like a flash. This climb was quite the star turn of the day, but, unfortunately, before reaching the finishing line his front tyre came off, and he passed the timekeeper riding on the rim.

In Class 7, from an observer's point, it seemed as if he (Tessier) was travelling faster than ever, and just before topping the 1 in 4 portion he wobbled and never seemed to regain his balance, and was thrown with considerable force to the ground within three lengths of the finishing line. Tessier was badly shaken and his machine damaged.

Another accident, which no doubt was caused by the rough state of the hill, happened to W. A. Jacobs (3½ h.p. Rex) when competing in the All Comers' Class. He had the misfortune to break his frame, letting his engine fall to the ground.

In the Novices' Class all succeeded in climbing the hill. The fastest appeared to be W. H. Elce (3½ h.p. Bradbury). E. C. Jarvis and the Brothers Dunn (3½ h.p. Triumphs) came up well.

In the Lightweight Class the best performance was made by F. W. Barnes (2¼ h.p. Zenith), this being the machine's first appearance in a hill-climb.

Class 2.—Standard Touring Single-cylinders. Undoubtedly the star performance was made again by F. W. Barnes on the Zenith, who came up the hill in excellent style. Others to make good ascents were W. H. Elce (3½ h.p. Bradbury) and L. S. Dunn (3½ h.p. Triumph). E. A. Colliver, who rode a 3½ h.p. Rudge, failed.

The T.T. Single Cylinders.

Class 3.—T.T. Singles. This event was looked upon as the titbit of the afternoon. Keen competition was experienced. From an observer's point of view, it was very difficult to pick out the winner, as splendid performances were accomplished by H. Lister Cooper (3½ h.p. T.T. Triumph), F. W. Barnes (T.T. Zenith), and W. Cooper (3½ h.p. Bradbury). The last-mentioned competitor appeared to be somewhat over-geared.

Class 4.—Multi-cylinders. Some very fast times were witnessed in this class, the Bats ridden by Hal Hill and S. T. Tessier being exceptionally fast, especially the latter.

Class 5.—Two-speed. The best climbs were made by P. W. Bischoff (6 h.p. Zenith)—the way in which he manipulated the gear was splendid to witness—and F. W. Barnes (3½ h.p. Zenith), whilst Bert Yates (3½ h.p. Humber) and R. G. Goslett (3½ h.p. P. and M.) came up well on their low gears.

Class 6.—Any single machine. The fastest appeared to be H. Lister Cooper, W. Cooper, and F. W. Barnes, while the star performances were made by J. S. Holroyd, who was mounted on a racy looking 2½ h.p. Motosacoche, and Bert Yates, on a 2 h.p. Humber, both these riders making clean ascents.

Class 7.—Any Multi-cylinder Machine. S. T. Tessier came up like a flash, but unfortunately fell, while G. S. N. Carter (5 h.p. Matchless) and Hal Hill (5 h.p. T.T. Bat) came up in good style.

Class 9.—All Comers. V. Wilberforce (5 h.p. Indian) and Hal. Hill (5 h.p. Bat) made very good climbs.

The timekeepers were Messrs. D. K. Hall and Burnley.

For once in a way the Herts County Club have delayed announcing the class positions, for at the time of going to press the actual results had not been worked out, but they will appear in our next issue.

THE INTER-TEAM TRIAL AT HARROGATE.

The North Middlesex M.C.C. team to take part in the above event at Easter (which is to be held concurrently with the first ladies' trial) is as under:

- Miss L. Berend (3½ Brough)
- Miss Rosa Hammett (2¾ Douglas)
- W. S. Bennett (3½ Bradbury)
- D. G. Blakey (3½ Bradbury)
- T. A. Brown (3½ Rudge-Whitworth)
- N. C. Dear (2 Humber)
- A. V. Deacock (3½ Bradbury)
- G. L. Fletcher (2¾ Douglas)
- S. F. Garrett (5 Indian)
- H. C. Mills (3½ Premier)
- J. V. Robinson (2¾ Douglas)
- S. B. White

The Coventry and Warwickshire M.C. has definitely decided not to take part.

The Herts County A.C. is expected to have the most representatives, with the N.W. London M.C.C. a close second.

Some of the successful competitors in the M.C.C. London-Exeter-London winter trial at Christmas, assembled at Brighton last Saturday, on the occasion of the M.C.C. opening run.

CURRENT CHAT

TIME TO LIGHT LAMPS | SPECIAL FEATURES

Apr.	6th	...	...	7.39 p.m.
,,	8th	...	...	7.43 p.m.
	10th	...	...	7.46 p.m.
	12th	...	...	7.49 p.m.

Three Clubs to meet.

Kirkstone Pass is the venue of the West Lancashire, Westmorland, and Cumberland and County Motor Cycle Clubs' joint hill-climb on Good Friday afternoon.

Dangerous Cross-roads.

At the instigation of the local club, a notice board is to be erected on the Holyhead Road, Coventry, warning road users of three successive cross-roads, where especial caution is needed. Two serious accidents occurred there last month.

The Inter-team Trial to Harrogate.

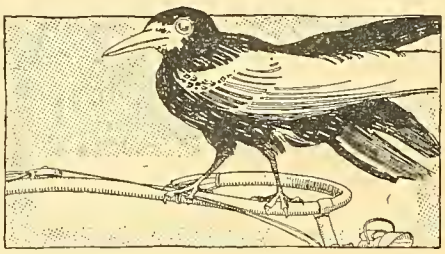
It is expected that there will be between seventy and eighty competitors—apart from the ladies—in the inter-team reliability trial, Barnet to Harrogate and back, at Easter. Five clubs will be represented. The N.W. London M.C.C. will be between twenty and thirty strong.

The Jarrott Cup Competition

Seventy entries have been received for the M.C.C. London-Land's End-London trial for the Jarrott cup at Easter. There will be at least one lady competitor. Mrs. G. D. Hardee being debarred from the ladies' competition on account of riding a man's machine has entered instead for the M.C.C. trial. Last week, Mrs Hardee journeyed from her home to Eastbourne and back, over 140 miles in the day.

Another Hill-climbing Expedition.

A party of motor cyclists comprised mostly of members of the Westmorland M.C.C. of Honister Pass and Towton fame, arranged to try the steepest hill in the North, which for steepness can only be equalled by two or three hills in the kingdom. It is called Aughton, pronounced "Hafton," and lies four miles east of Carnforth, close to the river Lune. The hill, which commences below the village, is about 500 yards long, and has a rather loose surface. The gradient, we are told, averages approximately 1 in 4. Only the following riders were



successful: J. E. Deane (3½ h.p. 1911 Singer), geared 5¼ to 1; W. Westwood (3½ h.p. 1911 Triumph), 4¾ to 1; T. H. Armstrong (3½ h.p. 1909 Triumph), 5 to 1; H. B. Harrison (3½ h.p. 1910 Bradbury), 5 to 1; G. Braithwaite (3½ h.p. Braithwaite), 4¼ to 1. Until last week-end the ascent was considered impossible.

Motor Cycles for Business Purposes.

The Education Committee of the Essex County Council have decided to make an allowance of 2½d. per mile to their officers when travelling by motor cycle on the committee's business.

London-Edinburgh Run Notes.

Seven London to Edinburgh runs have been held by the M.C.C. Three members have competed six times, six have covered the journey five times, ten four times, sixteen three times, twenty-two twice, one hundred and three once.

A Motor Cycle Wedding.

An event unique in the annals of motor cycling took place in Halifax last week and attracted a curious throng of spectators. The spectacle was a motor cycle wedding, the contracting parties being Mr. Harry Booth and the bride Miss Hetty Nicholl. The bridegroom is an enthusiastic member of the Halifax M.C.C., the members of which turned out to the number of twenty on their motor cycles, nearly all with sidecars attached, and some sort of decoration. The bridal sidecar was decorated with flowers, and had a wind screen. The ceremony over, all was laughter and confusion. After a photograph had been obtained (reproduced on page 359), the noise of twenty engines resounded in the air, and bride and bridegroom leading the way in a hail of confetti, the procession filed through the main streets of the town. Later the happy couple left for London.

A Three-speed Worm-driven Gear.
Finding a Winning Team.
New Section of the London-Land's End Run.
Club Runs and Competitions.

London Clubhouse Scheme.

The committee have now received a great portion of the £100 required towards the formation of the limited company which it is proposed to float in connection with the above. Any motor cyclist who is interested can obtain further particulars from the hon. secretary, Mr. H. G. Cove, 41, Wellington Street, Strand, W.C.

The Motor Cycle in Germany.

Mr. E. Körber, whom our readers may remember as the owner of a special made 7 h.p. Matchless and Lowen sidecar, illustrated in our pages some time ago, writes giving us his reason why there is a comparative decline in the pastime in Germany. He has been inspired to write after reading the extract from a Teuton's views of the industry and pastime, published in the issue of March 16th. Mr. Körber's opinion is that the popularity of the pastime is severely handicapped because there is no weekly half-holiday in Germany, and even on Sundays many people work an hour or two.

Next Saturday's Hill-climb.

Those motor cyclists who will be journeying through Berkhampstead on Saturday on the way to the Oxford M.C.C. open hill-climb are advised to exercise great caution in riding through that town.

Metropolitan Police Traps.

This week's issue of *The Autocar* contains a list of active police traps in the Metropolitan area, also a map showing the districts in which these traps are situated. Motor cyclists will be interested to see how the boundary of the Metropolitan Police area is defined. From the trapping point of view this is of paramount importance.

Opening run of the Birmingham M.C.C. to Stratford-on-Avon last Saturday. Some of the participants.

The Problem of Timing.

Already we have received a number of contributions in reply to the offer of £2 2s. in the last issue for the best suggestion for timing speed competitions. Articles not exceeding 250 words must be in our hands before the end of the month.

Strength of the Auto Cycle Union.

Two thousand nine hundred and twenty-eight motor cyclists represent the total strength of the Auto Cycle Union. Affiliated members, comprising 83 clubs, number 2.398, and there are, in addition, 530 individual members.

North v. South Hill-climb.

Entries for the North *v.* South hill-climb at a secret venue in Yorkshire for the P. and M. cup close on the 10th inst. North-country riders should send their entries to Mr. Felix Scriven (the Bradford M.C.C.). Southern riders to Mr. C. Cooke (Herts County A.C.). The hill climb is open to all, whether riding with sidecars or not.

Shap Fell Hill-climb.

Prospective competitors in the Shap Fell open hill-climb next Easter Monday are reminded that entries close on Saturday next. Entry forms may be obtained from the hon. secretary of the organising club — the Westmorland M.C.C.—Chas. B. Robinson, Feeney Green, Kendal.

Lynx Coronation Demonstration.

An advance programme of the Douglas Coronation demonstration. Jubilee celebration, and carnival from Wednesday, the 28th. to Saturday, July 8th, inclusive, is to hand. In addition to the motor races to take place within that period, quite a series of attractions are being arranged, the chief of which include an open golf tournament, world's marathon race, fancy dress parade (including cars and motor cycles), brass band contest, trout angling competition, bowling, aviation display, motor gymkhana, etc., etc.

First Ladies' Competition.

Eight lady motor cyclists have already entered for the Herts County A.C. Harrogate trial for *The Motor Cycle* cup at Easter—which is most encouraging support for the first venture of its kind. It is estimated that there are not more than fifty riders of the fair sex in the whole country, besides the eight mentioned, several will enter the trial *en route*. Next Saturday, the 8th inst., is the closing date, so lady riders must make up their minds quickly. A souvenir is to be given to every starter. Entry forms are obtainable from Mrs. C. C. Cooke, Rose Cottage, North Mymms, Herts.

Machines Entered.

The ladies' Douglas is so far the best represented in the competition. Two competitors are to be mounted on these machines — Miss Hammett and Miss Douglas. Mrs. Wade, of Cardiff, whose photograph appeared in our pages not long ago, has entered her 3½ h.p. Scott, and Mrs. C. C. Cooke is to ride her ladies' 3½ mph with a 1911 engine—the only one of its kind ever made. Miss Berend will, of course, ride her new 3½ h.p. Douglas.

FUTURE EVENTS.

April 8.—Oxford M.C.C. Open Hill Climb.
" 14.—(Good Friday). Annual Meeting of Northern Clubs at Richmond, Yorks.
" 14-17.—M.C.C. London-Land's End Trial and Easter Run.
" 14-17.—Herts. County A.C. Inter-club Tour to Harrogate and back, first Ladies' Competition, and Open Hill Climb.
" 17.—Westmorland M.C.C. Open Hill Climb on Shap Fell.
" 22.—A.C.U. Quarterly Trial (Yorkshire Centre).. Starting from Harrogate.
" 29.—Bristol B. & M.C. Open Hill Climb.
May 6.—Herts. County A.C. Open Hill Climb.
" 27.—Herts. County A.C. Open Speed Trials.
June 10.—Birmingham M.C.C. Open Hill Climb, Shelsley Walsh.
" 17.—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
July 8.—A.C.U. Metropolitan Centre Eliminating Trial for Club Championship.

Italian Lightweight Definitions.

We have received the following communication from the Società Sportiva "La Torino": "It is agreed that no other association than the above exists in Italy to regulate and look after the development of the sport of motor cycling, and with the intention of establishing an exact criterium in the construction of motor cycle engines, we venture to submit to you the following pertinent questions. Our organisation has for five years run the most important motor cycle competitions in Italy—the Susa-Mont Cenis hill-climb, over a 23 kilometres course, with a rise of 1,436 metres (sixteen miles rising 4,697 feet)—and is determined to maintain the sporting side of this contest and its importance both from a practical and an industrial point of view, and asks manufacturers to be good enough to reply to the following questions: (1.) Does the one-third litre class (333 c.c.) still interest you? (2.) Should this class be abolished, and what limit would be advisable to establish for lightweights, 280 or 290 c.c.? (3.) In the medium weight class, is it desirable to establish a cylinder bore limit, and what dimensions are considered practicable? (4.) Is it desirable in such a contest to abolish pedalling gear, or reduce the pedalling gear ratio to the minimum?"

The Lycett trophy, to be awarded in the Birmingham M.C.C. Land's End reliability trial at Whitsuntide.

Water-cooled Motor Cycle Engines.

The various articles on water-cooling for motor cycle engines which have appeared in these pages have inspired another firm of manufacturers in addition to the Green Syndicate and Scott Co. to experiment with a water-cooled motor bicycle. This machine was seen in the Midlands recently, and we are told that the results so far have proved eminently satisfactory. Yet a fourth water-cooled motor cycle is marketed—we refer to the Lewis, a successful machine of Australian make.

French Motor Cycle Trial.

A motor cycle trial will be held by the Marseilles Motor Club on April 16th. There will be two classes—one for speed and the other for reliability—and the Touring Club de France medal will be presented to the winner of the touring class. A team of riders from the Barcelona Club will take part, and already twenty-two entries have been received, comprising lightweight Peugeot, N.S.U., and Terrot motor cycles. The course will be from Marseilles to Nice.

Stoupe Brow.

A party of members of the Scarborough and District M.C., journeyed over to Stoupe Brow a fortnight ago to inspect the "test" hill included in the A.C.U. six days' trial. No one climbed the hill, but the general impression gained is that the road is climbable, certainly by passenger machines if the driver is not afraid of plenty of low gear work to enable him to pick his way, and also has no objection possibly to damaging his tyres. The latter possibility deterred some of the Scarborough members trying the ascent.

Prize for an Ascent of Stoupe Brow.

At a committee meeting subsequent to the above visit it was decided to present a prize, value one guinea, to the first member of the club who successfully climbs Stoupe Brow without pedal assistance. This prize is open to both ordinary and visiting members.

Ascents of Stoupe Brow.

Last week-end, in the presence of several members, C. Marson, on a 1903 3½ h.p. T.T. J.A.P., and J. W. F. Tranmer, on a 1911 standard Triumph, climbed Stoupe Brow, but as both had perforce to dismount on some of the loose stones (although they started again and reached the top) they do not secure the club's prize.

Birmingham Club's Land's End Trial.

The regulations governing the Lycett Challenge Trophy competition are now ready for distribution to members of the Birmingham M.C.C. The competition is to Land's End and back, on June 3rd, 4th, and 5th. The trophy is being made by Messrs. Rem Fowler and Platts, and is illustrated on this page. It will be held by the winner for one year, and a cup presented by Mr. H. Austin will be won outright. Twenty entries have already been received.

Opening Run of the Motor Cycling Club.

THE ever active Motor Cycling Club, which never sleeps and organises competitions even in the winter, opened the season proper on Saturday last by a run to Brighton. The run was a success and eclipsed all previous records as regards the attendance of members, though the weather conditions were by no means favourable. First of all the dust during the journey to Crawley was appalling, and as there was no wind it hung over the road in a dense blinding fog.

The run proper started from the last-named village, and after tea had been served at the George Hotel it began to rain, slowly at first, and then with increasing vigour, so that the members arrived at Brighton looking more as if they had finished 200 miles in a six days' trial than a mere jaunt to London by the Sea. Of those who are mounted on motor cycles Gibbons turned up on a brand new Rover, Marians was on a neat grey lightweight P. and M., Wells had a smart 7 h.p. Indian and sidecar, while considerable interest was displayed in the new Bedelia runabout fitted with an 8 h.p. J.A.P. engine, new adjustable pulleys (adjusting one pulley alters the other automatically), and a hinged petrol tank which when one bolt is undone can be swung back, allowing free access to the engine. In future models, so Mr. Peyrecave told us, the pulley flanges will be made controllable from the driver's seat.

The 1911 opening run was the tenth the club has held. The first took place on April 12th, 1902, and only seven sat down to dinner in the evening. This year presented a strong contrast, as all who started arrived, and over 100 members attended the dinner.

An excellent meal was served at about 7.30 p.m. at the Ship Hotel, at which Mr. F. J. Jenkins presided. Mr. Harry Smith was present, and after the dinner Mrs. Smith gave away the medals to those of the successful competitors in the London-Exeter-London winter run who were present. Mr. Harry Smith received quite an ovation when he sat down to dinner, while later on when Mr. Charles Jarrott, the club's president, came in and sat down at the table for a few minutes, the large hall resounded with cheers. This was Mr. Jarrott's first appearance in public after his recent accident.

After dinner an excellent musical programme followed, for the arrangement of which Mr. J. Van Hooydonk was responsible, while the latter talented member gave some excellent lantern pictures of M.C.C. club life, some of which were made by Mr. Fry, the well-known M.C.C. official, from photographs which have appeared in *The Motor Cycle*.

Sunday morning was dull, but fairly fine, and at 11 o'clock those members who were present were grouped outside the Ship Hotel and photographed. A separate picture was taken of the successful competitors in the London-Exeter run.

The programme of the day was a run to Burford Bridge for lunch, but the weather again proved to be unpropititious, as the rain came down in torrents soon after the members

M.C.C. members (on the way to Brighton) passing under the quaint George Hotel notice-board at Crawley. Rain was falling at the time.

started. However, Wells, Gwynne, Dickson, F. C. Woo and other keen motor cyclists turned up at Burford Bridg About forty motor cyclists took part in the run, and of the many suffered from magneto trouble through wet mud ge ting on the terminals.

M.C.C. members crossing the railway level at Crawley after dismounting for a train to pass.

1,290 Miles in Six Days on Irish Roads.

ANYONE who is familiar with motor cycling conditions in Ireland, or has attempted to ride 200 miles in a day on Irish roads, will appreciate the merit of the performance which J. Healy, the Dublin and District M.C.C., brought to a successful conclusion on Saturday evening last.

He had been engaged since the previous Monday the task of riding from Dublin to Belfast and back ch day, and the fact that he duly accomplished e performance is as fine a tribute to the new Rudge-hitworth motor bicycle as it is to his own stamina, r, apart from the merits of the performance from purely mechanical point of view, it was a physical at of no mean order.

The distance from Dublin to Belfast is 102½ miles, t as Healy started each morning from his home at apelizod, a distance of five miles from Dublin, e actual distance covered each day was 215 miles, aking a total of 1,290 miles for the six days.

In respect of weather, Healy was moderately tunate, considering the time of the year, as had only two days on which n fell, but on one of these it s a regular downpour. Mon-y, Tuesday, and Wednesday re dry but cold days, with a terly north-east wind blowing. was wet on Thursday in the thern portion of the journey, dry north of Dundalk. On iday it rained persistently from rt to finish, and on Saturday aly completed his ride under most genial spring con-ions.

The checking of the ride was undertaken at Healy's request by the Dublin and District M.C.C., and a certificate of the performance will be issued in due course. Meanwhile it may be stated that the machine went through without any mechanical troubles, and the only delays on the road were caused by tyre troubles, of which Healy had more than his share.

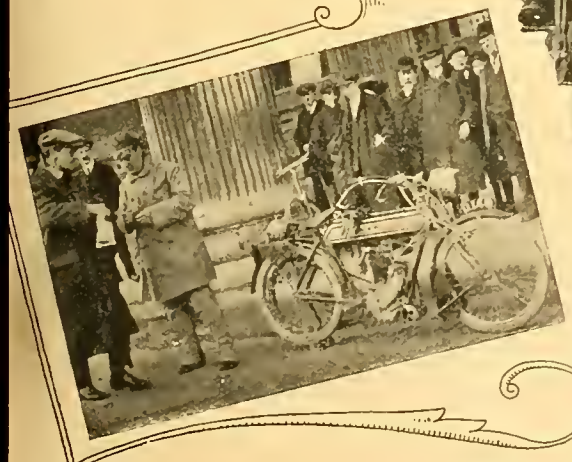
His total punctures for the week were seven, and of these four occurred on one day. One morning he was particularly unfortunate, as he punctured between his own home and the G.P.O., and losing half an hour in repairing missed his lunch at Belfast and got no food until he returned to Dublin.

The petrol consumption was at the rate of two gallons per day, an average of something more than 108 miles to the gallon. His belt ran for 1,393 miles, reckoning from the time he put it into use, without requiring adjustment, and on covering that distance the fastener pulled out.

Healy set himself to do twenty miles an hour for the total journey, and he adhered to his timetable without variation, starting each morning from Dublin at 8 o'clock and finishing at 7 p.m., with an hour's interval for lunch.

The fact that Healy is by no means a lightweight adds to the value of the performance. It is the longest distance on Irish roads in six days.

As mentioned in last week's issue, Healy is a son of Mr. T. M. Healy, K.C., ex-M.P., who is so well-known in Irish political circles.



(2) A. Carville, of the Dublin and District M.C.C., handing the rider his checks.

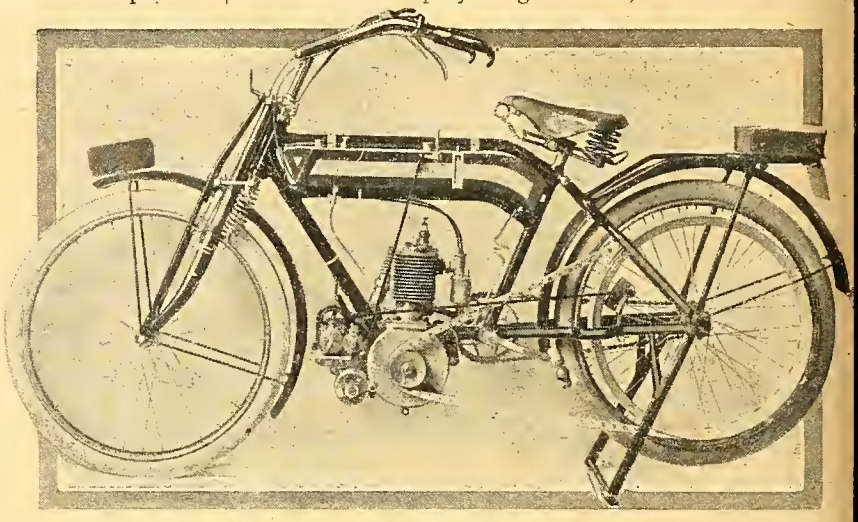
(1) J. Healy, who, riding a Rudge-Whitworth, rode 215 miles each week-day last week.

(3) Healy starting from the G.P.O., Dublin.

THE GRANDEX-PRECISION LIGHTWEIGHT.

WE had a recent opportunity of carefully examining the latest pattern 2½ h.p. Grandex motor cycle at the showrooms of the Grandex Cycle Co., 28, Gray's Inn Road, W.C. The motive power is a 2½ h.p. Precision engine, m.o.v., dimensions 70 by 76 mm. The frame is somewhat out of the common as regards design, as the top tube is curved and the tube below it is brought exactly parallel with the above, and the tank is made to fit in between the two. The petrol pipe union is situated at the lowest portion of the tank so that the last drop may be used up. The engine is supplied with gas by means of a Brown and Barlow handle-bar controlled carburetter, while the ignition is by the lightweight Bosch magneto. Druid forks are supplied, as also are a good stand and luggage-carrier. Points of convenience are well studied, as the machine is supplied with rubber footrests, petrol gauge, petrol drain tap, and silencer cut-out. The belt rim brake is controlled by a pedal, and its shoe acts on the rear belt rim. The machine is of pleasing appearance, and has the advantage of being a true lightweight, the weight being, we are assured, only about 105 lbs.

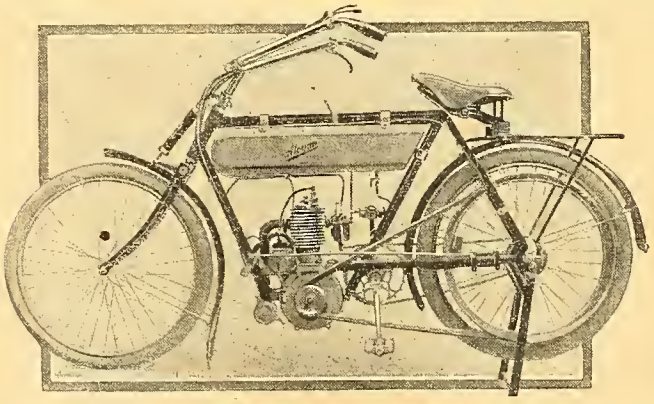
D. R. Greig, who rides a 3¾ h.p. Grandex, uses a long pipe extending from the carburetter main air entrance and projecting forward, so that a kind of forced induction takes place. A special adapter is fitted, and this rises above the level of the jet; through this choke tube the air is forced at high speed. Greig says the results are excellent.



The Grandex Junior fitted with a 2½ h.p. Precision engine.

THE NEW ALCYON.

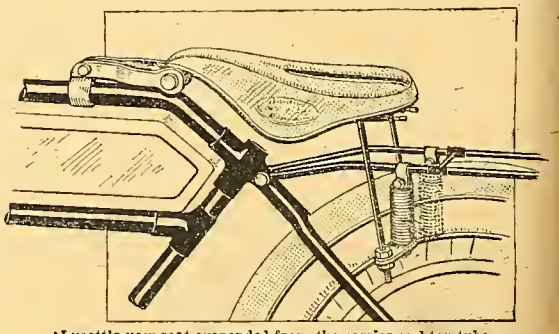
THE accompanying illustration shows the latest model Alcyon motor bicycle, with side by side valve engine, which has been specially constructed to suit the English taste. It will be noticed that efficient mudguards, stand, luggage carrier, footrests, belt pulley brake, handle-bar control, and Brooks's saddle have contributed towards making the machine conform to English ideas. The company is preparing three machines for the Junior Tourist Trophy Race with special 300 c.c. engines. M. A. Chantala, who represents the company in England at the present time, arrived at the Cecil Hotel on the 4th inst., and letters from those who wish to correspond with him regarding the English agency of this well-known machine should be forwarded to this address.



The latest lightweight Alcyon.

A NEW SADDLE SEAT.

THE appended sketch of Mr. Lycett's latest invention in saddles is practically self-explanatory. No seat-pillar is required, and beyond two tension wires under the leather top, a rear cantle plate and a nose, the whole of the usual under-frame, clips etc., are dispensed with. The peak is hinged, and the rise and fall are controlled by tension springs fastened to the tubes of the carrier, and the extremities of rods riveted into the cantle plate; nothing could possibly be simpler. The clip shown on the top tube allows of considerable for and aft adjustment, but in the case of some frames the clip could be fastened directly to the peak without the intervening shackle. By invitation of the patentee we rode a machine fitted with the seat a few miles last week over some fairly rough ground and were surprised to find how comfortable it was. Ordinary potholes and rough surfaces are very much ironed out. The seat is light, gives a low position, and the springs can readily be changed.



Lycett's new seat suspended from the carrier and top tube.

CLUB NEWS

Durham and District M.C.C.

Members are reminded that Thursday, April 13th, is the last day on which entries will be received for the reliability trial on Easter Monday. All particulars, together with route cards can be obtained from the hon. sec., Mr. P. Cress, Meadowfield.

Surrey M.C.C.

Mr. A. Baker White, on a 3½ h.p. Trump-Jap, and Mr. L. Kennard, 3½ h.p. Zenith-Gradua, won the silver and bronze medals respectively in the club's speed-judging trial, which took place on the 29th March over a distance of three miles along the Hog's Back. The winner's error was only six seconds in ten minutes, or 1%. The next club run is to Chichester on the 14th inst., starting 10 a.m.

Shropshire M.C.C.

Owing to the slackness which has pervaded the club lately, it is hoped that the opening run on April 9th will infuse a little life into members. The meet will be at the Red Lion, Wellington, at eleven o'clock for a run to Lichfield, and a speed-judging contest will be held over twenty miles of the route, the prize to be awarded being a pair of Kempshall tyres.

Streatham and District M.C.C.

The hon. trials secretary, Mr. E. B. Ware, 38, Rainbow Street, Camberwell, S.E., will be glad to receive entries for the speed-judging contest which will be held on April 8th from the country headquarters, the Clayton Arms, Godstone, to East Grinstead and back *viâ* Tilburstow Hill. The club will make Brighton its headquarters for Easter, and members will meet outside the Old Ship Hotel each morning.

Hull and East Riding A.C.C.

A good turnout of members was present at the opening run to Bridlington on Saturday last. The event included a speed-judging competition, in which the prize-winners were A. E. Downs and W. J. Noble. Mr. J. R. Kelly, chairman of the Northern League and the Leeds M.C.C., gave a lecture at the Grosvenor Hotel on "Speed Competitions" last week, which proved most interesting throughout, and gave rise to an instructive discussion afterwards. Other lectures on similar lines are contemplated, of which due notice will be given.

Derby and District M.C.C.

On the 26th March the club held a most enjoyable run to Bakewell, when a very fair number of members and friends turned out. The run to Nottingham on April 1st resulted in a very cordial meeting with the Nottingham Club, and arrangements were discussed for inter-club meetings and competitions.

North Staffordshire M.C.C.

The Easter Monday Hill-climb will take place in the Buxton district on a hill the location of which is secret, and has been chosen by a sports sub-committee. It is of good length and entirely suitable as a test. The rendezvous is the cattle market at Congleton, at 9.30 a.m., for weighing in. No competitor will be weighed in later than 10 a.m. It is suggested that after this event the members should proceed to Buxton.

Western District M.C.

Owing to the very unfavourable weather prevalent last week the flexibility hill-climb at Dashwood Hill, High Wycombe, was postponed until April 9th, and the run to Guildford for that date has been cancelled. The hon. sec., Mr. J. V. Armstrong, Eden Hall, Montpelier Road, Ealing, W., will be pleased to forward particulars of this hill-climb to anyone interested.

Fleet and District M.C.C.

This club held its annual speed trials on the 1st inst. on a deserted stretch of road at the early hour of 6.30 a.m. There were three classes. Class I., lightweights up to 340 c.c. Class II., standard roadster machines up to 500 c.c. Class III., open. Results:

Class I.—1st, F. Lukies (2½ h.p. Rex); 2nd, T. Little (Motosacoche).

Class II.—1st, A. Nelson (3½ h.p. Kerry-Abingdon); 2nd, C. Cable (Brown).

Class III.—This was run off in heats, and a very close race resulted. 1, R. King (3½ h.p. Bradbury); 2, S. B. Wilks (5 h.p. V.S.) Won by half a yard.

Final.—1st, R. Longley (5 h.p. Indian); 2nd, R. King (3½ h.p. Bradbury).

The competition was well attended, and despite the early hour there was quite a crowd of non-motoring residents in the neighbourhood who evinced keen interest in the racing.

Competitors in the Hull and East Riding A.C.C. speed-judging contest last Saturday.

Club News.—

Sutton Coldfield A.C.

The annual speed-judging competition in which cars and cycles compete on equal terms took place last Saturday to Ashby-de-la-Zouch, when four cars and fourteen motor cycles took part. The prize for motor cycles was won by Howard Smith on a Triumph.

Sheffield and Hallamshire M.C.C.

This month's fixtures are as under:
April 14th (Good Friday), Nottingham.
April 15th, Askern.
April 17th, Scarborough, to see Staxton Hill-climb.
April 22nd, Harrogate for Quarterly Trials.
April 29th, Honley.

Coventry and Warwickshire M.C.

The regulations for the Amateur *v.* Professional Trial on Saturday, May 13th, will shortly be ready for distribution. The course will be approximately 100 miles in length, and reliability and hill-climbing will be the deciding factor. The start will be from Whitley Common, near Coventry. Souvenirs will be presented to the winning side, and a special prize of a pair of Kempshall tyres for the best performance of the day.

Birmingham M.C.C.

The opening club run took place on Saturday last to Stratford-on-Avon as in previous years, and some thirty members with their friends turned out.

The club has now attained a membership of 103, and it is expected the number will be at least 150 before the end of the season.

On April 14th the annual Easter tour will be commenced, for which arrangements are well in hand, and anyone wishing to join the club and to take part in this tour should send in his name to the hon. secretary, Mr. R. Vernon C. Brook, "Oakdene," Cambridge Road, King's Heath.

Bristol B. and M.C.

This club is sparing neither expense nor time to ensure a complete success of its first effort in connection with an open hill-climb, and has engaged Messrs. F. Straight and A. Deacon (both A.C.U. timekeepers) as official timekeepers, and Dr. Patterson and Messrs. Cove, Scott, and Kelly have kindly agreed to be judges.

There is a special class for ladies only, which will be decided on A.C.U. formula, and Mrs. Gibb, of Gloucester, has already entered.

The hill is a good, straight, steep one, but with no hairpin bends. Home competitors will not be advised of its whereabouts until Friday night, April 28th, and visiting competitors by letter on Thursday, April 27th. Any competitor found practising on the hill will be disqualified and his entrance fee retained. Entry forms can be obtained from Mr. Philip Grout, hon. secretary motor section, Warmley, Bristol. Entries close by first post on Saturday, April 22nd.

Huddersfield and District A.C.C.

Last Saturday a fifty miles reliability trial was held, nine competitors taking part. The winner was decided by his times at no fewer than eleven secret checking stations. Results: 1, Liversidge (3½ h.p. Minerva and skeleton sidecar); 2, Heaton (3½ h.p. Bradbury); 3, Hall (3½ h.p. Triumph).

Walthamstow M.C.

The opening run to Abridge was well supported, and thirty-two members duly arrived at the Blue Boar Hotel on Saturday last, joining forces with a contingent of the local Walthamstow Team C.C. Several new machines were out, and the Bradburys, Scotts, and A.C. tricars came in for a deal of attention. Over seventy sat down to tea, and afterwards a musical programme was arranged.

Owing to bad weather on the 2nd inst. the Cambridge trip was abandoned. A 100 miles trial will be held on the 9th inst. on the Woodford-Newmarket road.

Forthcoming Club Events.

Club fixtures in brief for next week-end are:

Apr. 8th.—Oxford M.C.C. open hill-climb.
,, 8th.—Nottingham M.C.C. Opening hill-climb at Hardwick.
,, 8th.—Bradford M.C.C. Minor hill-climb, Tong Hill.
,, 8th.—Northampton M.C.C. Run to Woburn Sands. Meet Bridge Street Level Crossing, 2.30 p.m.
,, 9th.—Western District M.C. Flexibility hill-climb. Dashwood Hill.
,, 9th.—Shropshire M.C. Run to Lichfield with speed-judging contest.

Essex M.C.

Eastbourne has been decided on as the centre for Easter with runs from there to Rye on Saturday, lunch at the George Hotel at 1.30 p.m., and to Brighton next day, lunch at the Old Ship Hotel at 1.30 p.m., starting from York House, Eastbourne, at 10.30 a.m. on Saturday, and 11 a.m. on Sunday. It is hoped that members who can only get away for the day will join the party from Eastbourne at one or both of the above places. Members are requested to make their own arrangements. The opening run is on the 9th inst.

Torbay and District M.C.C.

On Good Friday a reliability trial to Truro and back is to be held, starting from headquarters at 8 a.m., *viâ* Newton, Moreton, Okehampton, Launceston (check) about 10.30, Bodmin, and Truro about 1 p.m. There will be a wait of one and a half hours for lunch, etc., returning *viâ* St. Austell, Liskeard, Tavistock (check) about 5 p.m., Plympton, Avonwick, Totnes, and headquarters about 7 p.m. for tea.

Non-members wishing to take part in the trial can do so by becoming members for that day at a special fee which will include entrance fee. Hon. secretary, A. Powell, 37, Fleet Street, Torquay.

Sutton Coldfield A.C. A group of competitors at the finishing point of the speed-judging contest.

Club News.—

Daimler M.C.C.

The next two runs are to Rugby on the 9th inst. and to Stratford-on-Avon on the 23rd inst.

Walthamstow M.C.

On the 9th inst. an extra competition has been arsanged, oeing known as the Kempshall Tyre Competition. The course is to Newmarket and back.

Grosvenor M.C.C.

Still another club has been formed in Manchester with headquarters at the Gorse Hill Hotel, Stretford. There was a good attendance at the first run to Holmes Chapel.

Northern League of Motor Cyclists.

Arrangements have now been completed by the Scarborough M.C.C. for the open Staxton hill-climbing contest on Easter Monday. Entry forms can be obtained from H. Frain, Snainton, Yorks.

Motor Cycle Club for North Wales.

Two or three readers have done their best to form a motor cycle club in N. Wales, but the district is so big and scattered that it is difficult to arrange a tentative meeting, say at Llandudno. We shall be glad to put in touch with one another riders who may be interested in this project if they will communicate with the Editor.

Batley and District M.C.C.

The opening run will take place on April 9th to Boroughbridge, dinner at Anchor Inn at 1 p.m., start from top of Brewery Lane, Soothill, at 10 a.m. All motor cyclists in the district are invited. The newly elected honorary secretary and treasurer is R. A. Horsfall, Fairfield House, Staincliffe Road, Dewsbury.

Nottingham and District M.C.C.

The above club has decided to admit visiting members at an entrance fee of 10s. 6d. Such members will have the privilege of competing in all open events, several of which are being organised for this year. Further particulars can be obtained from the hon. secretary, Mr. T. King, 8, Shakespeare Street, Nottingham.

Leeds M.C.C.

W. H. Islip will lecture before members to-morrow (Friday), at eight o'clock, at the Grand Central Hotel, on "The Enfield Lightweight Motor Cycle." The lecture will be illustrated by lantern slides and models, and will be the first of a series organised by Mr. J. R. Kelly, the hon. secretary, on modern motor cycles.

Putney and District M.C.C.

The opening competition of the above club was held last week in the form of a reliability trial to Worthing, which was well attended.

The executive of the club has arranged an extensive fixture list for the season.

Motor cyclists requiring further information should apply to the hon. secretary, Mr. M. G. Drew, Chilston, Kersfield Road, Putney Hill, S.W.

Bishop Auckland, Darlington, and District M.C.

This club has decided not to participate in the Northern League meeting, but instead an outing in the Middleton-in-Teesdale district has been arranged for that day.

York County M.C.C.

The opening run is to Richmond for the Northern Meeting on Good Friday, and next day a tour will commence, headquarters Kirkby Lonsdale. The first competition is a petrol consumption trial on the 29th inst.

Lewes M.C.C.

The opening run on the 22nd ult. to Tunbridge Wells attracted a large number of members, and the committee hope to arrange reliability trials and speed trials later.

Intending members should communicate with the secretary, Mr. Arthur Russell, Saxthorpe, Lewes.

Ripon and District M.C.C

The opening run is to Northallerton on Saturday next. The Richmond meet will be the venue on the 14th, and the inter-club hill-climb and Scarborough and Staxton on the 15th and 17th. Numerous other competitions have been arranged, and the club now boasts a good membership. The hon. sec. is Mr. F. W. Taylor, 14, the Square, Ripon.

West Lancashire M.C.C.

The above club opened its season with a run to Whitewell on the 26th ult. The origmal intention was to return by Bashall Eaves, but as the day was so fine the route was changed, and the Trough of Bowland was climbed, finally joining the Preston Road at Bay Horse. The surface of the Trough is better than last year, as the new metal has been worked in, although parts of the road are still very rough.

Oxford M.C.C.

A social run will he held on Good Friday to Bibury, Gloucester, meeting at Osney Bridge, Oxford, at 10.30 a.m. Picnic lunch. Ladies specially invited.

Owing to much extra work in connection with the open hill-climb to be held on Saturday next it has been found impossible to complete the programme for the season. It will be published later. Several club and inter-club competitions have been arranged, one being a social run, by invitation, to Wantage on May 4th.

The total membership is now 136.

Scarborough and District M.C.

A reliability run is arranged for Good Friday. Start from Flaxton Lane End (eight miles from York) at 7 a.m. for Richmond, by way of Flaxton, Stillington, Easingwold and Thirsk. All members are invited to enter and are asked to send in their entries to the hon. sec. On Easter Monday the Northern League hill-climb on Staxton Brow is arranged by this club, and promises to be a big success. A smoking concert will be held in the club rooms the same evening at eight.

Early in May it is hoped to obtain permission for a motor cycle gymkhana to be held on the Marine Drive, Scarborough. Members are invited to send in suggestions for events in connection with this gymkhana.

A MOTOR CYCLE WEDDING. An unique event took place in Halifax last week, bride and bridegroom journeying to the registrar's office on a motor cycle and sidecar, the wedding guests—chiefly members of the Halifax M.C.C.—being similarly mounted. Every sidecar contained a lady, and the motor cycles were decorated with flowers. (See "Current Chat.")

SOME COMMENTS ON POLICE TRAPS.

THE police trap is an un-English institution practised more frequently in England than any other country. The practice is carried on for two reasons—firstly, to swell the county funds by mulcting motorists for a mere technical breach of the law, and, secondly, to regulate the speed in congested areas. With the latter case we find no fault. Twenty miles an hour is enough and often too much in towns, villages, and other places where excessive speed is dangerous. To begin near home, the legal limit is enforced rigorously in London, and the metropolitan police are probably more actively engaged in trapping than any other body in the kingdom. While it is only right and just to control the speed of motor vehicles in traffic-thronged streets, there is no reason why motorists should be hampered in open and perfectly safe places.

Two Discreditable Instances of Traps.

In Kingston Vale, at the bottom of the hill leading from Putney and beginning at a horse trough on the right and ending near a farmyard on the left, is a trap 220 yards long in which cars and cycles alike are caught in hundreds. In this section there is neither a house nor a side turning, yet day in and day out the police have a large bag. In Potter's Bar, practically at the end of the village, on a perfectly straight piece of road with houses only on one side, is another metropolitan net for the unwary, which catches hundreds weekly in its meshes. Did the trap include the dangerous cross roads at the beginning of the village and were it worked in the most populous part of its wide street no one would object. There is yet another curious feature about this trap, and that is that its end is just short of the boundary of the metropolitan police area. Beyond this point an A.A. and M.U. scout stands perfectly powerless to act, as his jurisdiction ceases at the spot where the police pounce upon their prey. Of the short-distance traps in the open country roads in places where everyone is tempted to go beyond the limit no words can be found adequately to express my views.

The Usual Margin Allowed.

The novice is often of the opinion that 20½ miles an hour is a sufficient breach of the peace to warrant a conviction, but, generally speaking, in all magisterial courts in which the bench worship at the shrine of Justice, and some of them do try to be fair, as I firmly believe also do the police, five miles an hour grace in excess of the limit is allowed in the open country and three miles an hour in London. In ten-mile an hour limits fifteen miles an hour is generally allowed, the reason being that the timing of the police is crude, and many a case has been lost by them on proved inaccuracies. Take it as a whole, however, and considering how it is done, the unfortunate members of the finest police force in the world who have to descend to this dirty work do their best to be fair and are, generally speaking, pretty near the mark. In one case I remember the speedometer needle was quivering on 38 when the whistle was blown, and the alleged speed was 36. And this was in Surrey.

Let us now turn to the other side of the matter. I will try to be just to both sides. There is no doubt that many traps are perfectly justifiable, and where a limit in a dangerous street or village is imposed it is only right to observe or only approximately observe it. Who can grumble if he drives through Barnet at 18 or 19 miles an hour and gets caught? The victim thoroughly deserves his fate, as his action tends to put the whole motor cycle community under a ban in that particular district. I really think that Huntingdonshire is a much maligned county. Motorists speak with bated breath of Buckden and Alconbury, yet the traps here are actually in the villages, and a speed of 15 miles an hour is not expected to be exceeded. In the open country in Huntingdonshire the motorist proceeds unfettered.

How a Trap is Worked.

The novice taking up the pastime has probably little idea how a trap is worked, so I will tell him. Two constables in plain clothes either stand about as if they had nothing in particular to do, lean idly against their bicycles or hide behind hedges; some distance further on there is secreted a policeman in uniform, as his presence is necessary by law to stop the offender, since a motor cyclist may ignore the ordinary plain clothes pedestrian. Usually only one watch is used, and this is set going by the second man on receiving a signal from the first man that the motor cyclist has passed him. The speeds are all worked out beforehand, and if the watch-holder finds the limit has been exceeded he calls the attention of the uniformed constable by blowing a whistle or by some other means. The uniformed constable steps forward with outstretched arms, holds up the offender, and tells him the other officers will appear shortly and tell him his speed. The summons is supposed to be served within 21 days of committing the offence. If traps have to be set it is far more reasonable to work them over a long distance, preferably including a village.

In a certain county which has to be traversed in going from London to Edinburgh are two well-known traps three and four miles long respectively, and sometimes one and sometimes the other is worked. The A.A. and M.U. scouts are allowed a perfectly free hand, as the object of the traps is not to get money, but to control the speed so as to save wear on the roads. A man is on duty at each end, the one at the finish is usually in uniform. The time is taken at each end, the speeds are worked out at the end of the day, and the two men do not meet till their day's work is done. An *average* of 25 miles an hour is allowed over the whole distance, so that a man may enter at 45, stop as long as he likes, and come out at 50 if he can go so fast. Only should he do so he may be warned that if he has exceeded the average over the whole distance he will be summoned. A motor cyclist, on the other hand, who enters at 45 and comes out at 19 will probably receive a summons without previous warning if he has exceeded the limit. This seems to be a reasonable way of carrying out an unfair imposition. Meanwhile we long for the day when all trapping on the open roads is abolished.

AILETTE.

A Two-speed Hub Gear with Internal Brake.

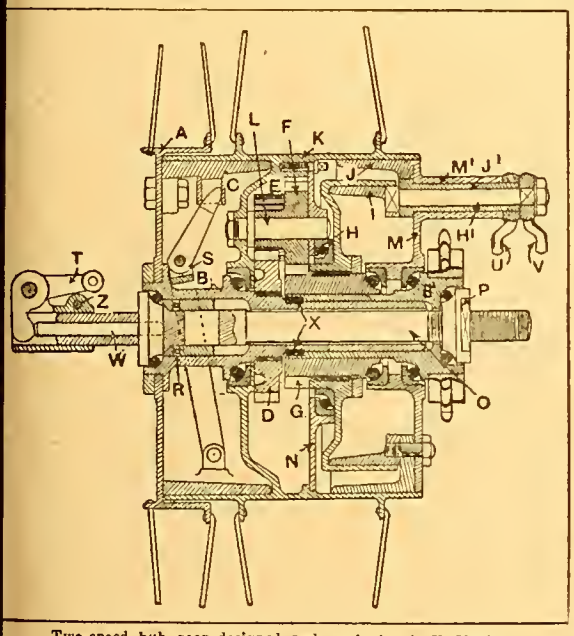
THE two-speed hub, which we illustrate, has been designed by Mr. Arthur E. Hooke, Wood End Lane, Erdington, Birmingham, with a view to providing for use on existing machines a hub, which shall combine two speeds, free engine, and braking mechanism. The whole of the mechanism is enclosed within the hub shell—but easy adjustment is provided.

It is claimed that this hub will fit any standard frames without alteration. The gear reduction on low speed is 45%. One great advantage is that all brake bands and clutch parts are enclosed, and by adjusting one cone P, wear on the whole of the ball races is taken up equally.

A short detailed description of the working of this hub gear may be of interest, and reference to the accompanying sectional drawing will make this clear.

The Action of the Gear.

The drum A, to which the belt rim is spoked, and which carries the main clutch member C, is carried by the sleeve B, which revolves around the fixed wheel spindle O; the latter is bored at one end to receive the clutch actuating from W, which is operated by the lever T. The gear wheel D is keyed to sleeve B, and is in engagement with planet pinions E and F, carried on the hub shell K. The loose pinion G carries a drum H on the inside of which the slow speed clutch I operates by lever V. The end plate M, which carries the slow speed clutch I and expanding brake J, is mounted on ball bearings, as shown, and is held permanently in a

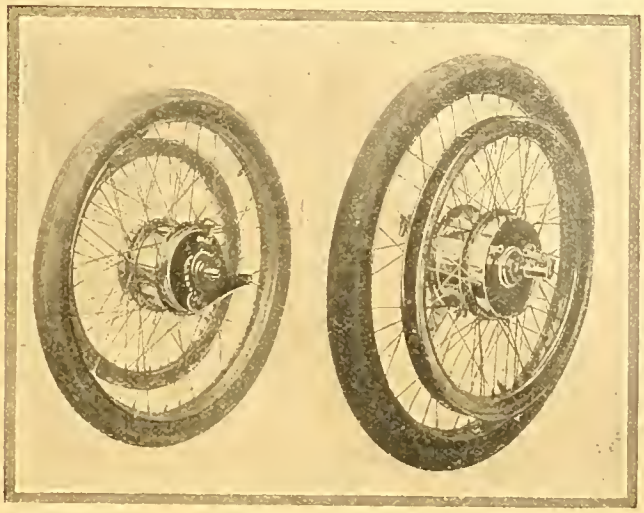


Two-speed hub gear designed and made by A. E. Hooke.

stationary position by means of an arm attached to the framework of the machine, as shown in the photograph. When the engine is running free the drum H is revolving quite freely, and to apply the low gear the lever V is operated to expand the clutch I, thereby causing the drum H and gear wheel G to remain stationary. The drive is then taken on by the gear wheel D and pinions E and F, which have the effect of causing the road wheel to rotate at a reduced speed to that of the belt rim, the gear reduction in this case being 45%. The top speed is obtained by operating the lever T, which expands clutch C by means of toggles S, a ball thrust R being interposed to take the pressure. By revolving the lever T and turning the rod W a few turns the adjustment of the high speed clutch is readily obtained. The whole hub then revolves as one solid mass. The brake J is operated by lever U, and is extremely powerful, but with that characteristic smoothness of action obtained only when the brake runs in an oil bath.

The whole of the running parts of this hub, with the exception of the pinions E and F, are mounted on ball bearings, which give a sweetness of running impossible with plain bearings, and it is possible with this absence of friction to free-wheel down any ordinary hill as rapidly and freely as a pedal bicycle. The gears and clutches are of ample proportions, and are said to be suitable for engines up to 9 h.p. The free-wheel clutch enables the engine to be started by means of the pedals, or the machine to be assisted by pedalling if desired with either the high or low gear in operation.

We have inspected one of these gears adapted to a twin Rex, and it certainly presented a very cleanly and neat appearance, thanks to the enclosed brake and operating bands. The gear is to be known as the Simplex.



The Simplex two-speed epicyclic gear in the rear hub. The clean exterior appearance is rendered possible by the use of internal clutches and brakes.

Mr. Edwin Dent, of York, a veteran motor cyclist, and one of the best known men to motor cyclists and cyclists in Yorkshire. He is connected with the N.C.U., the Yorkshire Road Club, and other cycling organisations. His mount is a twin lightweight N.S.U.

A Good Road Map.

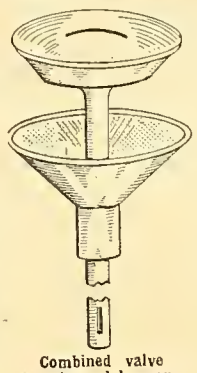
We are informed that His Majesty the King has graciously accepted a copy of the Continental road atlas of the British Isles for use on the royal car.

Tyre Successes.

O. C. Godfrey was using Continental tyres on his Indian on the 25th ult., when he won the Brooklands A.R.C. 70 miles per hour handicap from scratch.

A Valve Grinding Tool and Case.

A combined exhaust valve case and dummy valve seating has been sent us by Mr. P. B. Watt, of 90, Pilgrim Street, Newcastle-on-Tyne. The article is merely a hollow metal cone with a guide for the stem of the valve. The inventor points out that as most exhaust valve faces are made at an angle of 45 degrees the cone will suit almost any motor cycle valve on the market. It is intended that the face of the valve should be coated with an abrasive material, the stem dropped through the hole in the base of the cone, and the valve rotated against the conical surface. When acting as a case the valve is placed in the cone, the spring and cotter attached so as to hold the face against the cone and prevent the former from coming in contact with other spares or tools.



Combined valve carrier and dummy seating.

Invitation to visit a Magneto Factory.

The Simms-"British" magneto sparking plugs and other electrical accessories are manufactured at the works of the Simms Magneto Co., Kimberley Road, Kilburn, N.W., and those interested in magneto construction will doubtless be glad to hear that the firm is always pleased to show visitors round the factory, so that they may have an opportunity of judging for themselves of the quality of these productions.

A Saddle Query Answered.

Messrs. J. B. Brooks and Co., Ltd., Criterion Works, Birmingham, inform us that they are constantly asked which is their lowest saddle and which model they recommend for a lightweight. We have pleasure in stating that the B 104 is the lowest built model measuring four inches from the clip bolt to the under surface of the leather. The B 130 has been expressly designed for lightweights, and will be found a most suitable model for the purpose.

A Tyre Stopping Compound.

We have received a sample tin of the Aslatt tyre stopping which has, we understand, been used on motor car tyres with good results. The instructions for its use are very simple; a thin coating of rubber solution is applied to the damaged part and when nearly dry the cut is filled up with the stopping, which, of course, must be allowed to set before the tyre is ridden. The compound is made by the Aslatt Co., of 52, Bullar Road, Bitterne Park Southampton.

Another New Depot.

That well-known motor cyclist, Martin Geiger, informs us that he has opened new premises at 44, Clipstone Street, Great Portland Street, W., for the sale and exchange of motor cycles and intends to make a speciality of repairs to N.S.U. and V.S. machines, gears and magnetos.

Road Race in South Africa.

There were twelve starters in the motor cycle handicap race to Pretoria and back on January 1st. The winner proved to be G. Taylor, who rode a 3½ h.p. Bradbury, and was on scratch. His time for the distance (59 miles measured by cyclometer) was 1h. 17m. 21s., which is an extraordinarily good performance taking into consideration the rough roads and hills encountered. The third, fourth, and fifth riders also rode Bradburys.

Our Bookshelf.

"The Electrical Ignition of Petrol Engines," by J. W. Warr, A.M.I.E.E., 2s. net, postage extra (Alabaster, Gatehouse, and Co.). We can confidently recommend this publication to those of our readers who care to plunge more deeply into the subject of ignition than the average handbook allows. In the words of the publishers, the book is written "with a view to making technical details comprehensible to non-technical readers." No attempt is ma to specialise for the motor cyclist, a consequently much that does not intere him is contained in the book. But, the other hand, it is undeniably use to all users of vehicles driven by inter combustion engines, every electrical ig tion system for which is dealt with an able and lucid manner.

The Use of Motiphos.

We are in receipt of the latest p ticulars dealing with the use of "Mo phos," a preparation for dress leather, preventing slip of leather be clutches, and leather-lined brakes. T chief point to observe is not to ove the dose. It is made by the Motip Co., 34, New Bridge Street, E.C.

The Life of Tyres.

It is not often that one hears o motor cycle purchased in 1903 still r ning on the original tyres. yet North British Rubber Co., Ltd., B ford Chambers, Covent Garden, W. inform us that a customer of theirs had a motor cycle in use since that da and although he has kept no record the mileage, the Clincher A-won fr tyre, a 26in. × 2in., is still in use the front wheel. The engine has b rebushed twice and new rings fit during the time finished.

Folding Spanners.

Herbert Terry and Sons, Reddi advise us that they are now marketin very nice range of hardened and tempe steel spanners in a variety of sizes designs. Every one of these patterns been brought out to supply a felt w and already a considerable demand been experienced. Readers who interested in spanners should send to firm for a new booklet they have rece issued containing particulars and illus tions of folding spanners and a registered design called the Turbine

Wm. Hood climbing Arthur Street, Edinburgh, which feat he accomplished three times without difficulty o 3½ h.p. Rudge-Whitworth. This ascent, with its 1 in 3½ gradient, is becoming a popular test hill, but, of cou success depends chiefly on the gear ratio employed.

THE MOTOR CYCLE

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

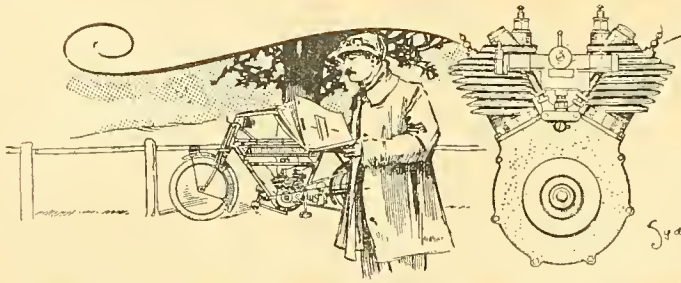
The Lady Motor Cyclist.

UDGING by articles and correspondence that have appeared in these pages, it appears that there is to be as much controversy in connection with the weight and type of machine which is best adapted for a lady's use as there s some time ago regarding the weight of men's chines. Of course, there is considerable difference the requirements of both sexes, but lady riders are better suited with one type or weight of motor ycle than men. Our reply to arguments on the ght question has always been that what is one 's meat is another man's poison, and the same ge applies equally to the weight and type of hines for women as for men.

t would be absurd to recommend a delicate woman ndertake serious touring in exceptionally hilly dis- ts with an under-powered machine which would cer- ly require pedal assistance above her powers, but districts that are not too hilly a lady would be er suited with a machine not exceeding a dred pounds in weight, and preferably with some n of variable gear, because she will find a machine his class better suited to her strength when she is ed upon to wheel it about in and out of hotel ds, garages, etc., and such a mount will prove e fast enough and a sufficiently good hill-climber satisfy the majority. However, there are lady usiasts who want to do everything that is possible e done on a motor cycle, and they will only be fied with a more powerful engine than can be fitted genuine lightweight. To such women the extra gth and energy required to manipulate the weight secondary consideration, and under the circum- ces a machine weighing 150 lbs. is not too heavy.

Interchangeability of Tyres.

TIME after time we have urged in these columns the desirability of motor cycle tyre manufacturers co-operating and issuing a tyre rim of standardised dimensions, so that the various makes of tyres may be interchanged as desired by the user. By publishing correspondence, touring articles, and editorial articles on the subject we have used our best endeavours to bring about this desirable state of affairs—so far, we regretfully admit, with little success. At the risk of reviving what may appear to older readers a monotonous subject, we again focus attention to this needful reform, which would be so much appreciated by the tourist. Letters of complaint continue to reach us from tourists, who, far from home, are unfortunate enough to be stranded with a badly gashed or burst cover, only to find that the nearest stock comprises one or, perhaps, two makes which will not fit the rims of his machine. We must confess that the disadvantages to makers adopting the course we suggest are not obvious to us, but the advantages which would accrue to the user need no further eulogy on our part. No compact having been formed by tyre makers, it would seem that there will be a recurrence of these grumbles with the advent of the touring season, and with a view to strengthening our campaign in favour of standardised tyre rims, we have laid the above bare facts before the Cycle and Motor Cycle Manufacturers' and Traders' Union, as the representative manufacturers' body, with a strong recommendation that it do all in its power to bring about tyre rim standardisation. We trust that that influential organisation will consider the matter with favour, and by so doing assist in rendering a service of paramount importance to motor cyclists.



YORKSHIRE AS SHE IS SPOKE.

Examples of the Dialect which may be Overheard by this year's Trials Competitors.

THE choice of Yorkshire as the venue of the A.C.U. Spring Quarterly and Six Days' Trials will cause motor cyclists to congregate from all parts at the base of operations, viz., Harrogate. Many of these riders possibly have had but little acquaintance with Yorkshiremen, and it may not be out of place at this time, as well as affording a little amusement to readers of this journal, to describe and illustrate with anecdote the racy dialect of the south-west parts of this broad-acred county. The several courses chosen by the Auto Cycle Union traverse the North and East Ridings much more than the West, so that from the point of view of this article it is perhaps unfortunate, as the drollest humour and originality in thought and speech are undoubtedly to be found in the West Riding, in the busy centres of the mining and manufacturing industries.

The subject has, therefore, only an indirect bearing on the trials themselves, and indeed upon the motor cycle at all, but we have found that cyclists have an abundant sense of humour, and their appreciation of local lore is always manifest when a native can engage their attention, say, over a pipe by the fireside, at the close of a hard day's ride.

"We'll Mak' a Start."

The Tyke is an egoist to the backbone, sportsman, musician, and a horse and dog lover—"it's so naked like to be b'aht a dog"—and the following little stories are chosen to illustrate some of those qualities, but their perusal in print is a very different thing from their narration in the rugged, forceful speech of the Tyke himself.

Shakespeare tells us, "Give every man thine ear, but few thy tongue"; so does the Tyke, but in this laconic way, "'Ear all, say nowt."

Notice the ego in the following aphorism and toast, "If ivver tha' does 'owt for nowt, do it for thi'sen. Here's tiv us, all on us, may we nivver want nowt, no'an on us, *nor me nawther.*"

The Southerner asks where do I come in? The Tyke is always in. How's this for rampant self? A burly 20 stone Yorkshireman arrived late at a country inn in his motor car and requested a bed. He was told, with due regret, that he could not be accommodated at any price. The parley was overheard by a more fortunate and well disposed gentleman, who kindly offered the giant half of his own bed. His luggage was taken in, after which the kind friend took him upstairs to inspect, and asked him politely which side of the bed he would prefer. "Nay, lad, I knaw nowt abaht sides; I'm bahn to lig int' middle."

The Yorkshireman is a keen and ardent sportsman, both as an actor and spectator. The writer once knew a Wakefield man who had attended the Leger at Do caster for fifty consecutive years, which is not a b record. Attend any of the cup finals at the Crys Palace, say when Sheffielders are playing; their vari and racy comments on the game are sometimes e cruciatingly droll, and could never be uttered by a one else.

Buying a "Hoss."

Somehow or other where horse-dealing is on foot t Tyke earns a doubtful reputation; he gets off the tra so to speak, and he really cannot help it. The follo ing is a fact: The mayor of a West Riding to attended a horse fair and there encountered one of own town councillors, with his hands deep into pockets. Out of the council chambers these worth spoke in the vernacular. "Na', George, what a'ht doing 'ere?" "Well, Mr. Mayor, I'm 'ere to buy hoss for sure." "Hes ta' seen owt likely?" "Yes, hev', a chestnut mare and I mun ha' it; it belongs that chap wi' t' tup neck standing there; he kna I'm a bit soft, so, Mr. Mayor, tha'd better go to h and buy that mare for me. Do'd best tha can, a come to t' 'Dog and Gun' and tell me what tha's paid His worship duly arrived. "Naw then, Mr. May how much did ta give for that hoss?" "Nay, l that's my business; I've bowt it for mi'sen."

The Yorkshireman under his somewhat rough exter is, within certain limits, a born musician. His bas profundo is unsurpassed, as well as his chorus singi Take, for instance, a rendering of the "Messiah" the Crystal Palace, when our friend was anxious impress his colleagues with the necessity of all putti their very best into the chorus "For he is the King Glory." When the crucial moment arrived he sa "Nah then, lads, let's show t' beggars who t' King Glory is." And no doubt they did; it was a force way of putting it.

The Pitman and his Dog.

The following from a well-known Yorkshire weel shows a pitman's devotion to his dog:

A Yorkshire miner, well known on the whippet r ning track, one day surprised his mates by marryi a very unprepossessing woman. "Well, Bill, owd l whativer has ta gotten spliced for?" "Well, that's much of a tale. I agree wi' thee that Betty is no a beauty. 'Appen if she hed been I sudd'nt a' w her. But tha' knaws that there dog of mine's pin away all t' day while I'm in t' pit, so I hit on t' id of wedding Betty. Well, shoo isn't a beauty, but sh vary good cump'ny for t' dog."

However, we must conclude this article, so we g a Yorkshire version of the Deluge—certainly not t authorised one, but the reader will observe that t

kshire as She is Spoke.—

endous event did not take place without the pre-e of a Tyke.

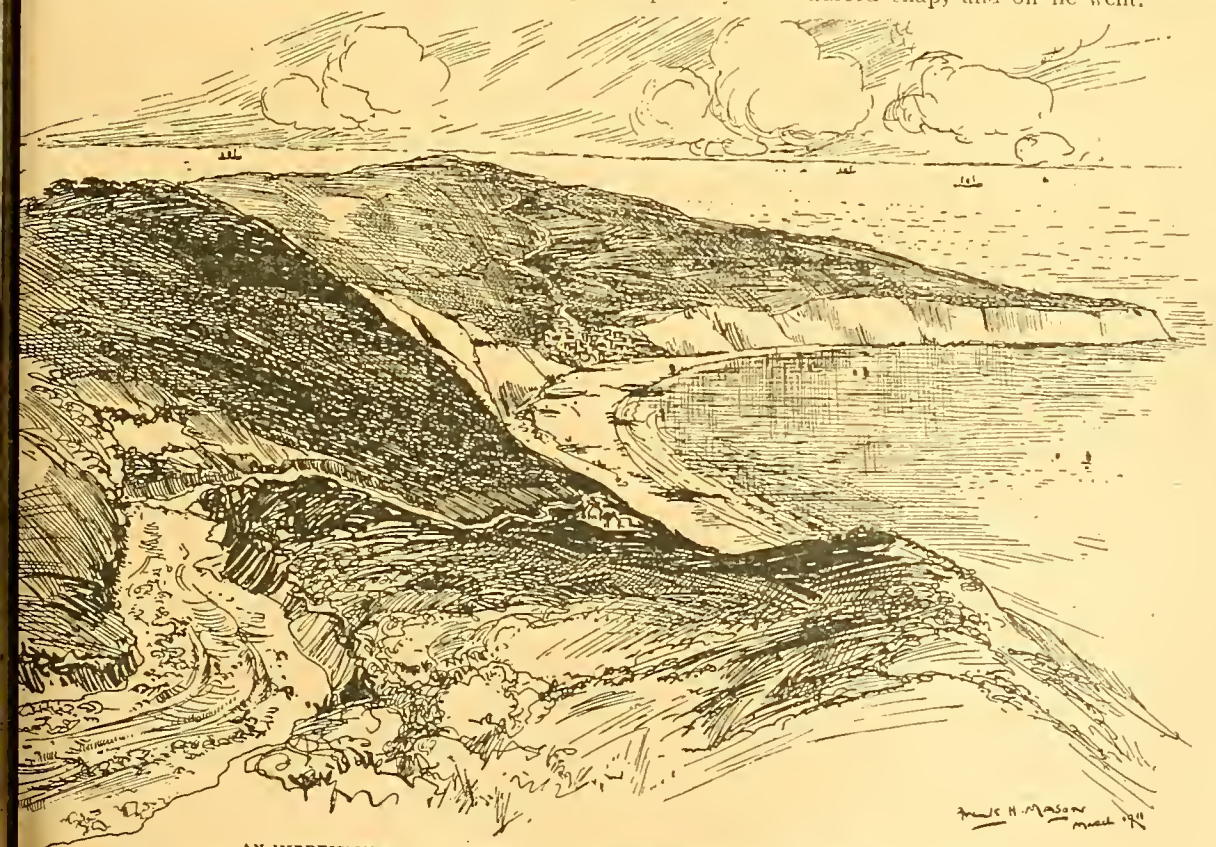
Noah and his "Hark."

id tha ivver 'ear that tale abaht Noah? Well, knaws, it wor at time o' t' Flood and Noah, 'e a cutish sort on a chap, and see'd it wor baan in and 'e made 'issen a hark, a sort on a big Billy-and daubed it ower wi' tar, so as to mak' it ertite, and nivver thee mind if it didn't rain—it teem'd daan!

ell, this 'ere Noah, he bowt and gat tergether all nimals he cut clap his een on, a bonny lot they an' all—hellifants, hantilops, beers, all mak's shaps o' beasts an' burds, and, efter a lot o' er, t' owd chap and his sons got 'em all abooard shut t' door, leaving 'em ter sort theersens, while ent ter get 'is 'bacca.

l wor inside, tha knaws, nobbut t' dove which ed atop o' t' Hark. He heddn't been sittun varry when 'e 'eard a gut noise aatside, same as if nut wor scratlin' and poising t' bottom o' t' Hark. alls aat ter Shem ter oppen t' winder and leuk aat and tell 'im wot wor up. Shem said 'e could see nowt but watter. "Shut t' door, lad," says Noah, "and fodder t' beasts."

Efter a bit, there wor t' same noise agean and Noah leuked out, hissen', and, sewer enuf, there wor a Bradford chap swimmin' abaat and poising t' Hark wi' 'is clogs! Noah axed 'im wot wor t' matter. T' chap said he wor fair daan stall'd o' swimmin' abaat and axed Noah ter tak' 'im in like. "Ger away wi' tha," says Noah, "wot does tha mean wi' poising t' Hark like that theer? Tha'll scrat all t' pitch off on it and tha's fley'd t' dove off on its peak." "Tak' us in, owd lad," says t' Bradford chap. "I sallin't," says Noah, "tha sud ha' com'd in wi' t' percession!" "Will ter lend us thy humberella then?" says t' Bradford lad." "Noa, I willn't," says Noah, and slamm'd t' winder daan. Nut soa varry long efter, there wor t' same noise agean. Noah leuked aat and t' Bradford chap wor still there. "Come, Noah, lad, is ter baan ter let us in, or tha hissn't?" "Noa, Hi Hammut," say Noah. "Well, then, tha can go ter ———, for a can just bottom it an its baan ter tak' up." says t' Bradford chap, and off he went.



AN IMPRESSION OF STOUPE BROW AND ROBIN HOOD'S BAY, BY FRANK H. MASON, R.B.A.

rough track leading to the top of Stoupe Brow is seen in the foreground. In the distance, above Robin Hood's Bay, is the road to Hawsker, both being part of the course on the third day of the A.C.U. Six Days' Trials next July. It is considered by some to be an impossible test hill.

M.C.C. SEVENTH ANNUAL TEAM TRIAL.

the suggestions recently made in these columns, lso communicated personally to Mr. J. Van lonk, have been carefully considered, but in all there has been some objection to them being d out. It has, therefore, again been decided to run the trials for *The Motor Cycle* fifty-guinea challenge cup on the same lines as formerly in the Midlands, but over a new course, on Saturday, June 17. One hundred miles will be covered at a speed of 20 m.p.h., but watches and speedometers *will be barred.*

OCCASIONAL COMMENTS.

By "IXION."

A Free Engine Criticism.

Several machines on the market obtain a free engine by opening out the flanges of the engine pulley and dropping the belt through on to a ball bearing ring beneath. Such devices perform the ordinary functions of a clutch quite gracefully, but there is one detail in which they fail.

When the machine is being wheeled about with the engine at rest, in some instances the belt fastener is apt to catch, and if the manipulator gives the machine an irritated jerk the fastener is very likely to snap. As a consequence this form of clutch is scarcely ideal as a means of facilitating the handling of the machine when not under power, and those who buy very heavy outfits, especially with sidecars fitted, under the impression that the ball bearing ring gives as free wheeling as a disc clutch, for instance, are likely to be disappointed.

Of course, a little ingenuity can always surmount such trivial handicaps. One rider of my acquaintance employs a sort of large meat hook, which he hitches under the levers of his twin's valve lifter and over the inlet pipe; it hoikes both valves high off their seats, and renders his heavy twin very light in the handling.

A year or two ago a rider in the 1,000 miles had an auxiliary pedal exhaust lift on a big twin; it also hoisted the valves very high off their seats, and could be locked for wheeling the machine. I saw him free-wheeling down easy slopes and pushing his leviathan about garages, and the engine was all but as free as if he were using a disc clutch.

I wonder those pedal valve-lifters are not more common on heavy twins. They render "pretty" driving easier than the best clutch, since they enable the rider to ignore his carburetter levers when he eases for a bend; and they afford considerably greater leverage than a short hand lever, which is a great consideration on a long ride.

Drip-feed Pumps.

The patentee of the Best and Lloyd drip-feed pump sends some interesting remarks upon my recent comments. He considers that the only real variation in the rate of drip occurs in the last portion of the plunger's travel, and hence users of his pump are instructed to pull up the plunger when it has fallen to a certain mark; hence a steady rate of drip is attained. My experiments confirm this assertion. He agrees with me that a pump with a short, thick barrel is best suited to this form of lubrication, but points out that innovators find themselves spiked on the horns of a dilemma. If they fit a long barrel of thick diameter, duffers will over-lubricate, owing to the increase in the contents; if they fit a stumpy barrel of thick bore it will look very unsightly. Hence the long thin barrel has been retained.

It possesses one advantage, however, in that it helps to make the travel of the plunger more perceptible. He is dead against my petition for a by-pass pipe and tap, cutting out the drip valve in emergencies, and enabling an entire barrelful to be promptly injected into the crank case without disturbing the valve adjustment, and says he knows of no occasion when a full charge can possibly be 'an engine. I can only reply that most riders sionally find it useful to follow this procedure, th the practice is becoming less common.

I am prepared to admit that greater care obviate its necessity, but here are instance occasions when a full pumpful is almost essential rider is loafing along easy roads in a strange di with his drip set to feed a very moderate amou oil. It is perhaps dusk. Suddenly he finds hi confronted by a terrible hill. The surface and corners and the air lever demand all his atten he cannot perform the rather fiddling duty of s his drip-feed to supply oil at treble the existing It is a great convenience to knock a by-pass tap and shove in a full charge; though not a couns perfection, it is the easiest and simplest plan rider who is not too expert.

Or again, as might easily happen, rather a s and excitable rider is climbing Sutton Bank. used up with great rapidity on such a long and ascent, and somewhere about the Trough the e unmistakably shrieks for more lubricant. On clever rider could adjust a drip valve, but two dabs could do the needful if a by-pass were prov

My correspondent's view may be correct counsel of perfection, but in practice there are few lubrication systems which possess no aux device. The Indian mechanical pump is su mented by a hand pump, the standard two-drip used on small cars has a hand pump; even Da cars have an auxiliary linked with the thr The drip-feed pump can no doubt be unthrottled my point is a rider does not care to upset a adjustment which has taken him some trouble to

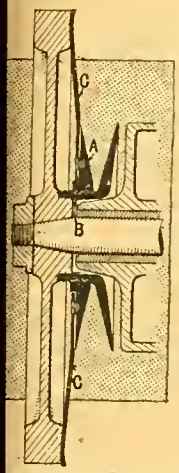
An early type of motor cycle invented and made by Mr. E. J. Pennington, w death in the United States was recorded in our issue of March 30th. The cylinder engine drove direct on to the rear axle. The rider is a well-k Coventry schoolmaster, Mr. W. M. Turrall.

THE DE HAVILLAND MOTOR BICYCLE.

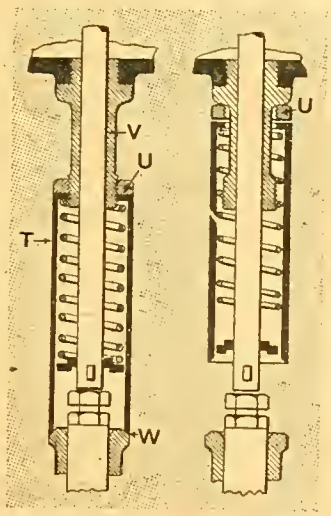
THE motor bicycle bearing the above name has figured in several competitions during recent years, probably its most notable performance being the win in the Herts County A.C. open climb at Aston last June.

Up to the present these machines have only been built vately, but it is the intention of a small syndicate to ept orders for delivery to the public at an early date.

The principal improvements which have been made to latest model are an adjustable pulley between the ine and the outside flywheel. The loose flange A, which screwed to fit a thread on the boss B, has attached to



ction of outside flywheel nd adjustable pulley.
Loose flange.
Engine crankshaft.
Spring arm engaging with a recess inside rim of flywheel.



Valve spring tensioning device and cover patented by Mr. H. D. Teage and fitted to the new De Havilland.

flat spring C with arms which engage with recesses on inside of the flywheel rim. To adjust the loose flange r out the spring arm is pushed out of the recess, and n then be rotated in the desired direction, carrying the y flange with it.

e valve spring tensioning device and cover are of novel n.

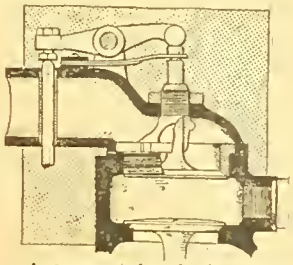
e spring bears against the inturned edge of T (see h), and is locked in position by the nut U, which s on to the valve guide V. If it is desired to remove valve the nut U is screwed up toward the top of the , as shown in sketch; this causes the spring to expand enables the cotter to be removed.

e tube T, when in its working position, rests on the f the guide at W, forming a joint, which prevents oil ing from the tappet guides.

other feature is the overhead inlet valve. Previous ls have had both side by side and overhead valves, but new model has the exhaust only at the side. The valve seating is screwed into the cylinder, and the gas inlet dome is fitted over a threaded portion of the top part of the seating, a nut being screwed on afterwards to hold it in place.

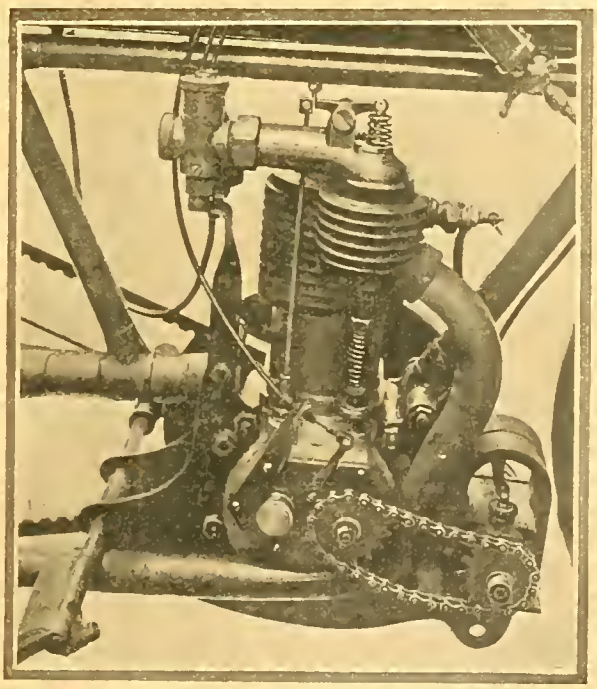
It will be noticed that the spring used to close the valve is of the leaf type and carried on the outside; coil springs will, however, be supplied if preferred. The engine plates go right from front to back in one piece, carrying the platform for the magneto at one end and the footrest bar at the other.

The magneto can be fitted at front or rear of cylinder, and if the latter position is adopted the exhaust timing gear spindle can be changed for the inlet, the spindles and cams being so made that they are interchangeable.



Arrangement of overhead M.O.I.V. The tappet rod works through the inlet pipe, and the spring is of the laminated or leaf type.

Enquiries for the present respecting this machine should be addressed to Mr. H. D. Teage, 29, Warwick Row, Coventry.



De Havilland overhead inlet valve mechanism, also showing engine cradle and outside flywheel.

MOTOR CYCLE EVENTS IN THE ANTIPODES.

e opening run of the newly-formed motor cycle club outh Australia was held on February 18th. Over fifty d in the run, three having passenger attachments. The nation was Golden Grove, and on arrival an interest- hill-climbing competition was run off on a hill about iles in length. The surface was mostly good, but 100 s from the finish, at a nasty S bend, the surface was and caused all the riders to slow down; indeed, at point several ran off the road.

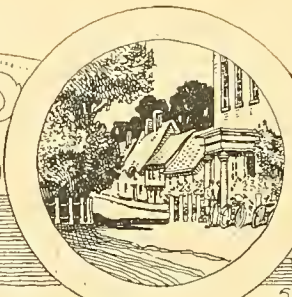
e event was run in pairs, the winners of each heat rid- against each other until the ultimate winner was ed. No formula was used and no times were taken. 3½ h.p. machines (any make) were scratch, the 5 h.p. two seconds behind, and the 6 h.p. four seconds be- scratch, thus the first man to reach the top was the er.

veral exciting heats were run, although the bad spot at the finish prevented the faster machines from passing at this point. The two most exciting heats were between a 6 h.p. Matchless and a 3½ h.p. Triumph, and a 3½ h.p. Bradbury and 3½ h.p. Lewis water-cooled (locally built); in both instances the results might have been different had the surface at the finish been in better condition.

The following makes of machines were represented: L.M.C., M.R., P. and M., Norton, Triumph (3), Kerry Abingdon, Calthorpe, Bradbury, Peugeot (4), Matchless (2), N.S.U., Minerva, Lewis water-cooled (3), J.A.P., and Rex. The final was won by C. A. Richards (1911 Triumph), who rode well throughout; second H. Ragless (1910 Triumph); third, C. R. Churchward (1911 water-cooled Lewis).

To show how the use of motor cycles is increasing in Australia, in January, 1908, 355 were registered; 1909 there were 955; 1910, 1,372; whilst on January 1st, 1911, the total registered was 1,805.

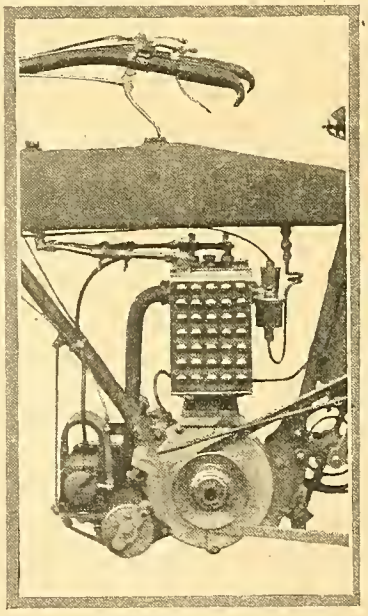
A RUN ON A WATER-COOLED SIDECAR COMBINATION.



ON the invitation of Mr. Frederick May, the managing director of the Green Engine Co., 55, Berners Street, Oxford Street, W., a firm which is the sole licensee under Green's Motor Patents Syndicate, we recently had an interesting demonstration of the capabilities of the 3½ h.p. water-cooled Green motor bicycle with a Mills and Fulford sidecar carrying about twenty-four stones in all.

The Engine Design.

Leaving Richmond, Mr. Green was in command, and skilfully steered through the traffic-thronged streets of Twickenham. Even at this early stage of the journey the efficiency of the engine was apparent, as the smallest movement of the throttle produced that quick acceleration which called for so much favourable comment on the occasion of our report on the behaviour of the solo bicycle (see page 1118, November 17th). This efficiency is undoubtedly due, firstly, to the design of the engine, as the valves are placed in the combustion chamber directly over the piston (the most efficient position)—their springs are outside, so that there is no difficulty in keeping them cool; and, secondly, to the water-cooling.



The water-jacketed cylinder of the Green engine. The water is carried in the forepart of the tank.

The Green engine is of the much followed dimensions—85 by 88 mm.—the top gear is 4¾ to 1 and the low gear 9½ to 1. The hub two-speed gear is the well-known Millennium.

The cooling surface of the neatly arranged honeycomb radiator is thirteen square feet, and of its satisfactory working we had ample proof before the day's run was finished. Yet another interesting feature of the Green engine is that it uses very little oil. So much for the digression.

On the Road.

To return to the run, we left the tramlines and made easy work of the intervening distance between Twickenham and Staines. Before reaching the latter town we changed seats with Mr. Green, and after leaving Staines made our way along Runnymede, following the pretty winding banks of Father Thames to the point where the road from Englefield Green to Windsor is joined. Here we turned to the left, and without any chance of a rush began the ascent Priest Hill, leading from the level of the river on Englefield Green.

1 in 9 on Top Gear.

The hill is not a bad one, but it is about thr quarters of a mile long, ascends in three "steps," a finishes with a gradient of about 1 in 9. Althou quite unaccustomed to the management of the machi we drove it up on the high speed the whole way a splendid pace. At the foot, opening the throttle ma the combination fairly leap forward, and thereaft once the levers had been set, there was naught to but to sit tight and let the mach do the rest, and this it did entirely our satisfaction.

We then descended Egham Hill, at the foot turned sharply round acute angle bend at the bottom found another hill with a gradient about 1 in 8. On this we stopp twice and restarted, once on the e portion and again on the 1 in gradient.

At this point we allowed the mach even to begin to run backwards, then accelerated the engine and s denly engaged the low gear. Desp the severity of this test the eng came through with flying colours, took up its load with ease.

Returning to Richmond, Mr. Gr again occupied the saddle, and s ceeded in negotiating that steep from the lower road from Richm to the foot of Petersham Hill wh leads up to the Star and Garter. whole ascent was made on the gear, but the throttle was only ope by the corner near the Mansi Hotel, and the crown of the hill taken in splendid form with plenty to spare. As as we could tell by measuring with a foot rule al a course of bricks in a wall adjoining the stee portion of the hill, the gradient was 1 in 4½. A gether we were thoroughly satisfied with the test, thoroughly convinced of the efficiency of the wa cooled Green engine. There was no sign of boi at any time, the natural circulation was perfect, all the water joints were sound and tight.

The Green Engine Co., we may mention, specia in aeroplane engines up to 60 h.p., and such w known flying machines as the Cody are fitted them; in addition, they are British built.

Climbing Two Noted Shetland Hills.

sending the two prints reproduced on this page, Dr. T. Lovett, esident of the Shetland s, mentions that the er photograph, showing nself on his P. and M. l sidecar on Maris nd, scarcely does justice the gradient. Maris nd is one of the steepest s in Shetland. It is ap- ached by a very steep rt descent, then a sharp n, and at once the lient is encountered of n 4 for perhaps twenty ds, then a moderate tch of easier gradient ere the sidecar is seen), n another short hump 1 in 5, afterwards a tle slope to the top. "So as I know," Dr. Lovett es, "no motor cycle ever surmounted this without pedal assist- e. I almost hesitate ell you that I got up a 12 stone passenger idecar. I had always rded the hill as in- ible to me with side- and never attempted until recently. Of rse, I failed at first, came so near succeed- that I felt I could ter it.

I approached the hill a warm engine and h oil, squirmed round corner as fast as I ght safe, and rushed he first hump, which ust managed; then I nced spark as far as sible and approached second hump, which lso cleared with the of vigorous kicking he ground, and was so ed that I forgot to e down on reaching the top, and almost shot off into the sea. The whole secret lay in manipulating the spark, and that was the only occasion when I saw the advantage of handle-bar control for the magneto, which I may say I don't care about as a rule.

(Top) The steepest climb in Shetland, considered to be as severe as Amulree.

(Bottom) Dr. T. Lovett climbing Maris Grind, one of the steepest ascents in the Shetland Isles.

"The other print shows me going up *the* worst hill in Shetland, and which I consider worse than Amulree. It is three-quarters of a mile long, and has several sharp turns. Note the narrow track and rough surface."

OF INTEREST TO CONTINENTAL TOURISTS.

Since May last, practically every tourist visiting the Continent with a motor vehicle has taken out an International Pass. One of the disadvantages of this form of licence is that in its present form the pass is only available for one entry into any one country.

At the last Congress of the Ligue Internationale des Associations Touristes, Captain Kingston — the Motor Union representative—suggested that the Customs officials should be approached with a view to their issuing instructions that the pass should be stamped only when the vehicle (car or motor cycle) entered the country, so that the pass would be valid for any number of entries. As a result of the negotiations, the Customs officials of France, Belgium, and Holland have signified their assent to this procedure.

AMATEUR v. PROFESSIONAL RIDERS.

ext month is to witness an innovation in the way ompetitions. On Saturday, May 13th, the Coventry Warwickshire M.C. has arranged such an event onnection with the eliminating trial for the M.C.C. A.C.U. club championships, and it is already ating much interest. The Herts County A.C. otor cycle section) follows on with a similar trial on Saturday after, but on a more ambitious scale. Whereas the Coventry M.C. event is of 100 miles, including non-stop climbs up Newnham with its maximum gradient of 1 in 6, the Herts County members will cover a course of 200 miles, and besides a slow and fast hill-climb, an acceleration test of 100 yards is to be included. Eighteen will compete in the Herts County event, whereas it is expected that forty will take part in the Coventry Trial.

LEADING MOTOR CYCLE CLUBS

G. H. Hollis, founder and hon. treas.

C. Williams, chairman of committee.

No. 13.—NORTH-WEST LONDON MOTOR CYCLING CLUB.

THIS is the club's sixth year. Mr. G. H. Hollis started the club by calling a meeting of motor cyclists in Cricklewood and district.

A strong committee was quickly got together, with Mr. H. V. Davidson as hon. secretary, and one of the first rules drafted limited the membership of the club strictly to amateurs. Although intended to cater mainly for local riders, it was decided not to confine membership to any fixed radius.

Mr. W. H. Pidgeon was the first president, but circumstances having compelled him to resign after a successful term of office, the position was accepted at the commencement of 1910 by Mr. Victor Hart, whose services in connection with the pastime are so well known.

An energetic captain was found in Mr. A. Stanley Phillips, who held the post with signal success until the close of the 1909 season, when pressure of business unfortunately compelled his resignation. Mr. Glyn Rowden stepped into the breach, and has again been elected for the present year. The success of the club is largely due to the able leadership of these two members.

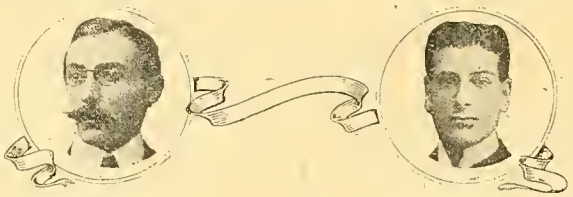
Mr. G. H. Hollis was elected hon. treasurer, and still holds that post.

The two months of 1906 were mainly taken up with organisation, and it was decided to affiliate at once with what was then the Auto Cycle Club.

By the end of 1907 considerable progress had been made, a hill-climb at Sharpenhoe and a speed-judging competition having been held and a team entered for the A.C.U. penalty run, a whist drive winding up the season.

First London to Coventry Run.

An extended list of competitions was held during 1908, Mr. A. S. Phillips organising the first London to Coventry run, 17 gaining silver cups out of 25 starters. The competitions included an inter-team trial with the Western District M.C.C., the N.W.L. winning, while a team was again entered for the A.C.U. penalty run, second place being gained, but in the M.C.C. team trial the club had to be content with a very lowly position.



G. Rowden, captain.

C. A. Stern, hon. sec.

At the beginning of 1909 the hon. secretary, Mr. H. V. Davidson, felt called upon to resign, after four seasons' useful work for the club, and his post was filled by Mr. C. A. Stern, who continues ably to wield the pen on behalf of the members. The usual competitions were held, augmented by an arduous run to Aberystwyth and back and an inter-team hill-climb with the Oxford M.C.C., the latter winning. A reliability trial was contested with what is now the Herts County A.C. (section), the N.W.L. winning. A gymkhana was also held on a secl by-road, the police arriving too lat witness any of the performances.

Last Year's Record.

The year 1910 saw everything in swing, over 70 names being on register.

The first item on the programme a very interesting tour to Harrogat Easter in competition with the H County A.C., the handsome cup sented by the Service Com being won for the first tim the N.W.L. Club. This followed by the usual climb trials, including the sending team to Daventry for the M competition, four m e m b making non-stops.

A heavy programme has arranged for 1911, with special prizes promised. Service Cup will again be peted for in the Harrogate and the Coventry run will be repe The ten-guinea "Thomas" Challenge will be put up for competition, a special inter-team competition is t held in France with the Motor Club de Lyon.

This is a new departure, which hoped will not only revivify inter competitions and enlarge their scope also contribute materially to internat goodwill.

Of the original seventeen mer only five have resigned, including who left the club on entering "trade."

We have now dealt with practically all the older motor cycle bodies, and owing to the advent of the competition season feature, which has been widely appreciated, will be discontinued, at any rate for some months.

A good turn out of the newly-formed Eastleigh and District M.C.C., prior to a run to Petersfield. One riding member of this club is 70 years of age.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Valve Cotter Extractors.

[5526.]—I beg to point out that I have been using a ver for extracting the valve cotters of motor cycle engines milar to the one illustrated in your journal of last week, d made by Mr. J. A. Prestwich, in my workshop for the st five or six years. W. KERR.

Motor Cycles for Bread Delivery.

[5527.]—I was interested in your article on "Motor ycles for Bread Delivery," but regarding the sentence, "He akes claim of being the only baker in London to make use the motor cycle carrier for bread delivery . . . . . rhaps the claim can extend to the whole country"—If ou care to come down to Colchester you can see daily a otor cycle with a big box fitted on the carrier for recep- on of goods, delivering bread at customers' doors. The ker's name is Mr Cheek. S.F.W.

Dutch Club's Visit to the Isle of Man.

[5528.]—When in Amsterdam a short time ago I had the easure of meeting Mr. A. Citroen and Mr. Ferwerda of utch Motor Cycle Club, who, as you are aware, are coming er here to see the T.T. race.

They intend to land at Harwich and to ride to Liverpool, nd I would suggest that motor cyclists or local clubs along e route make a point of meeting them and riding with them portion of the way. I am sure it would be appreciated, nd, personally, I intend to meet them at Lichfield and ride ith them to Liverpool.

English motor cyclists visiting Holland can rely upon every ssistance being rendered to them by the Dutch Club, and seems to me only fair that we should extend a similar elcome to them. PERCY S. CLEWS.

The Motor Cycle in India.

[5529.]—Please allow me a little space in the columns f your unique weekly, as I would like to give you my xperience of the late 1910 model 3½ h.p. two-stroke Scott or the benefit of your Indian and colonial readers.

It landed in India in September last. I have ridden it n all sorts of weather and over the worst possible roads maginable, and it is a pleasure to add that it has never nce failed me during the last six months of almost daily utings, the mileage being just 3,500 to date.

As regards its hill-climbing powers, I have been twice up to hakrata Hill Station, doing a continuous ascent of twenty- ight miles with all the bends, twists, and hairpin corners eculiar to an Indian road of a hill station. The pull can e imagined when I say that one has to rise from an eleva- ion of 2,000ft. to 7,100ft. above sea level in the twenty- ight miles journey. My speed over this stretch has always een 24 m.p.h. by Jones speedometer, and has always been aultlessly performed.

I have carefully checked my petrol consumption, and find hat I can easily do 67 m.p.g. on roads in this district and 0 m.p.g. on good roads down country, where no ups and lowns exist and no river beds to cross, as I have to do ut here. The 67 m.p.g. is on a road where I have to cross ix unbridged dry river beds in a journey of twenty-six miles, besides two hills with a gradient of 1 in 6.

My only trouble has been the flooding of the carburetter, nd this was before I understood my mount in any way. It never occurs in riding, but only when the machine is at rest with petrol tap open.

The last cry of mine is, "Oh for a car with a Scott two- stroke engine."

Wishing your most excellent and helpful weekly continued success,

A. H. MIRZA.

Rambagh, P.O.

Hill Climbing.

[5530.]—My 3½ h.p. standard 1911 Premier with a 5 to 1 gear, ridden by Rev. H. Horton, made a clean ascent of Stentafords Hill, Torquay. This hill has the reputation of being the worst main road hill in England, as it has an average gradient of 1 in 4 for a quarter of a mile. You may remember that the hill was first climbed a few months ago by Mr. Harding on a 7-9 h.p. V.S. This ascent created a great sensation at the time.

This is certainly the first time a 3½ h.p. has made a clean ascent of this hill on such a comparatively high gear as 5 to 1. I may add that by mistake the cut-out was closed, and a few strokes of the pedals were given at the worst corner.

This same cycle I have also ridden up Hakechase—the worst hill on Dartmoor—Cudham Church Hill, Hog Trough, etc. This is entirely unsolicited, but I think the performance is well worthy of publication. CYRIL HELM.

Improving Old-pattern Machines.

[5531.]—In reply to "W.I.P.," I also have an old pattern 3¼ h.p. surface carburetter Rex which developed the same symptoms and behaved in exactly the same manner as he describes.

Last year I decided to bring the machine more up to date, so had the tank converted into a three compartment one with a straight bottom, and had a B. and B. carburetter fitted. The dome end of the inlet pipe was shortened, and the upturned elbow was brazed to it in such a manner that, when finished, it lay horizontally over the top of the cylinder, between the compression tap and inlet pipe clamp, a short liner at the join and also at the end of the pipe to take the carburetter which comes exactly in the centre behind the cylinder, requiring no stay or bracket to hold it in position. A very much stronger spring was fitted to the inlet valve, also washer between spring cap and stem guide, giving an opening of about one-eighth of an inch.

With these alterations, together with occasional l.p.a., it takes a sidecar, my wife and self, and negotiates hills it would not look at before.

These most satisfactory improvements were carried out by Messrs. Cross and Sons, Oxford. I am only sorry I did not have the frame cut down and magneto fitted at the same time.

Trusting the above may be of assistance to "W.I.P." and others. AL 464.

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Criticisms on Sidecar Topics.

[5532.]—In your issue of March 30th, under Questions and Replies, you say, and not for the first time, that the rigid sidecar is free from sideslip, while the castor wheel is not entirely so. I have driven both types a considerable distance during the last few years, the latter well over 30,000 miles, both the type in which the wheel can swing right round and the more modern radial castor, and in spite of driving in both winter and summer, snow and rain, with sidecar light and loaded over Derbyshire or South Wales limestone, or badly laid tramlines, I have never had a semblance of sideslip with any type of castor wheel. In giving the advantages of one over the other you miss two very important points. The first that though the fixed wheel may be lighter in weight the castor is much lighter to pull, as the wheel always tracks, however attached; also the second point, which is a further proof of the first, the tyre lasts three or four times as long. I have run two tyres on a castor wheel over 15,000 miles each without retreading, while you are lucky if you get 4,000 miles with a fixed wheel.

My second criticism is in connection with the article in your issue of March 23rd entitled "Sidecar Suggestions" under joint authorship. In it I find the to me extraordinary advice to users of 3½ h.p. machines with sidecars to "use a jet as small as possible." My experience is, use a jet as large as possible with main and auxiliary air to suit, and it is still possible with proper driving to avoid overheating and mount steeper hills, and generally get greater power, and I speak of the same make of machine as that used by the writers of the article.

Finally, in agreement with your editorial comment on March 30th to letter from Australian correspondent *re* rubber belts, I am prepared at once to sign a yearly contract for rubber belts with any manufacturer who will guarantee me, winter and summer in this country, 1,000 miles average with my 3½ h.p. with a sidecar, or 3,000 miles with my 3½ h.p. solo.

E. S. NEW.

The Suggested International Reliability Trial.

[5533.]—With reference to letter No. 5498 from the president of the Moto Club Liègeois, I would like to repeat how sorry we are that we cannot arrange an international trial for this year.

I must confess that I am not so very keen for an international reliability trial, because I fear that the motor cyclists when riding in competition would have no time to admire our nice country. I think it would be too bad for our English brothers of the pastime to return to their home with a remembrance of checking posts, but without having seen such nice and interesting towns and islands as Volendam, Marken, etc.

The organisation of a reliability trial would be very difficult for us, as we do not know all the different rules used in England, and should not like to make it too difficult for our guests.

I therefore propose that the Dutch Motor Cyclists' Club should arrange a club run in 1912 through Holland, assisted by English and Belgian motor cyclists, as many as possible.

In 1913 the English and Dutch motor cyclists could go to Belgium, where the Moto Club Liègeois could arrange a club run through Belgium, and in 1914 Holland and Belgian riders could go over to England for a club run, arranged by an official English motor cycle organisation.

What do the English and Belgian motor cyclists think of this idea?

A. CITROEN, hon. sec. Dutch M.C.C.

The Motor Cycle in Italy.

[5534.]—I am an interested and faithful reader of your paper, and always look forward with pleasure to the three o'clock post on Friday, because it is the post that brings me your valuable weekly.

I want to inform you and your readers that very important competitions take place every year in Italy. The first one is the Mont Cenis hill-climb, 6,252ft. high. The race starts right at the foot of the pass at Susa, 1,500ft. high, and in 21 kilometres (13 miles) rises to 6,252ft., a rise of 4,752ft. Last year the winning machine did the run in 22 minutes at a speed of 37 miles an hour, and I think that is pretty good, considering that it was a 4 h.p. single-cylinder single-speed machine, a "Borgo," an Italian make, and that the same machine won also all the other hill-climbs at Florence and on the Lake of Como.

You must consider that on the Mont Cenis climb the average of 37 m.p.h. is very good, as there are no fewer than 25 to 30 sharp turns such as you meet at Amulree (according to photographs I have seen of that hill), and right before getting to the top of the pass one has to negotiate six of those turnings in little more than half a mile. As you will see, it is a trying hill-climb, and some of your crack riders would enjoy it and ought to try it. Unfortunately they would perhaps find it is a little too far from their homes, but if any of your readers should be on this side of Europe at the beginning of June, when the race will be run, they ought not to miss it. I might also mention that Mr. Borgo, riding the winning machine, has won the race for three years in succession, although there were 25 machines entered and of different makes, such as the Zedel, Peugeot, N.S.U., Fafnir, and other smaller machines, such as Moto-Rêve, Motosacoche, etc.

We are not so behind time in Italy in connection with motor cycles, and the Borgo machines are fitted with a 4 h.p. engine, m.o.v., spring forks, spring seat, h.b. control, variable pulley, and multiple disc clutch. I have no interest in the firm, and I am only writing this to prove that we have good machines and exciting competitions in Italy. The only thing missing is a good, interesting, and valuable paper like yours.

ITALIAN RIDER.

Cannes.

The Lady Motor Cyclist.

[5535.]—The letter 5506 in your issue of March 30th is one of the sort that few people like to read twice. Mr. Osborn L. de Lissa says he "does not wish to hurt the feelings of Miss Berend," but seems to try to do it notwithstanding.

A few Westmorland M.C.C. members who took part in the informal hill-climb at Aughton, which was referred to in our last issue, page 352. On the occasion of this meeting Aughton Hill, with its 1 in 4 gradient, was climbed for the first time.

From the tone of Mr. de Lissa's letter I should imagine that he himself is very sore about something. If he is vexed that Miss Berend has chosen a motor cycle other than his own firm's production, that is not a good reason to rush into print. Neither is it cricket.

Mr. de Lissa, for Motosacoche, Ltd., "may assure Miss Berend that the only machine suitable for that lady is a lightweight, etc., etc.," but he must know perfectly well that Miss Berend has already tried them, and is not at all the novice that one might be led to believe from his letter.

In choosing the specially made Brough machine Miss Berend has pleased herself, and, in my opinion, made a very good choice indeed. THOS. F. HUNT.

[5536.]—I have read with deep interest the letters respecting lightweights and heavyweights for lady riders. As a rider of over twelve months may I give my experience?

My first machine was a 2½ h.p.; my second a 2¼ h.p. lightweight twin Enfield, which I manipulated with the greatest of ease and pleasure, and the time has not yet arrived when it required l.p.a.

With all due regard to Miss Berend (for whom I have the greatest admiration), is it not the ease and skill with which a lady handles her motor that will induce new devotees to take up the pastime?

I am in no way ready for a bath chair myself, but cannot (though the spirit is very willing) handle a 3½ h.p. in anything like the dexterous way I can be across my Enfield and away before the usual crowd can collect.

Surely, if lady riders can only be induced to give the motor a trial a lightweight is the thing for beginners, and it may be left to the discretion of individual riders to change over to the higher power with its change-speed and clutch manipulation so soon as they are as expert as Miss Berend now is.

(Mrs.) AGNES FLANDERS.

[5537.]—Will you permit us to reply to Miss Berend's letter in your last issue, prefacing our remarks with the hope that we may keep this discussion interesting in itself, and above the level of personalities.

It is true we interest ourselves solely in the sale of lightweight machines, but the reason for that is obvious. We have convinced ourselves after years of experience that this class of machine is the most suitable for all-round use, and more especially does this apply to ladies' motor bicycles.

We have not the least desire to dictate to Miss Berend as to what is the most suitable machine; we were expressing our own opinion based on some years of experience, and we may be forgiven for assuming that Miss Berend would agree to that opinion when one recalls that a few months ago she wrote: "My idea of an ideal mount for a lady is a twin-cylinder lightweight, magneto ignition, 2in. tyres, two-speed gear, and free engine clutch. Some ladies would perhaps prefer a single-cylinder of about 2½ h.p. to 3 h.p. The weight should not be more than 100 lbs., that being as much as a lady could manage."

In another part of the same article Miss Berend mentions riding a heavy machine, which she states weighed something over 2 cwts. "Imagine a lady running after a machine of 2 cwts. to start it. Miss Berend also says a friend followed on a cycle in case she should need assistance.

We cannot help feeling that Miss Berend's judgment when she wrote the above was sounder on the subject under discussion than it appears to be now, and we shall expect to find after a little more experience of her present type of machine she will return again to her former love, the *bona-fide* lightweight.

We can assure Miss Berend and your readers that as a matter of fact the 2 h.p. lightweight is capable of climbing without any assistance the stiffest hills, for as it is a machine designed for ladies, it is suitably geared.

As to her remarks about shopping, starting without assistance, control in thick traffic, surely these are points of the highest importance to ladies. We hold strongly that unless the machine is capable of being used for shopping, and similar purposes, by a lady without assistance, it cannot be fairly described as a ladies' machine, nor will it ever become popular as such. It is just because the 2 h.p. ladies' Motosacoche fulfils these requirements that we find its popularity growing so rapidly

The "roaring round" experience Miss Berend mentions in her next paragraph was probably due to her want of knowledge in manipulation of the machine. Had she tightened the belt, this, no doubt, would have been overcome. Your readers are aware that we provide for this on the ladies' Motosacoche by our handle-bar belt control.

We are sorry Miss Berend thinks our view a one-sided one. The fact that we have introduced a more powerful machine for men surely shows that we are not governed by prejudice in this matter. If we thought it desirable to do so, we should at once introduce a heavier machine for ladies.

Much experiment, and years of experience, have convinced us of the contrary, and there is no doubt that the bulk of expert opinion is with us when we say that for the purposes of a ladies' machine, handiness, cleanliness, and daintiness must be taken into consideration, and as Miss Berend once remarked regarding weight, "nothing over 100 lbs."

For MOTOSACOCHE, LTD.
OSBORNE L. DE LISSA, Director.

Best British and American Times.

[5538.]—With reference to Mr. O. C. Godfrey's letter, surely it would be a sporting action on his part to accept the challenge of Air Springs, Ltd. Should their man fail, that company will pay the sum mentioned to a charity. Should he succeed, then Mr. Godfrey will pay, and have the satisfaction of knowing a device with which he can let his Indian go "all out" on Brooklands against De Rosier. I am in no way connected with Air Springs, Ltd., or the Indian people. P.C.C.

Experiences with a Lightweight.

[5539.]—We notice in the issue of April 6th, under the above heading, a letter [No. 5516] addressed to you by a Mr. H. F. Sparrick.

We think that the difficulties this gentleman has through the combustion head of his engine working loose could easily be overcome, and if he will communicate with us we should be pleased to give him every possible assistance.

N.S.U. MOTOR CO., LTD.
G. SCHINK, Managing Director.

Pressure Feed to Oil Pump.

[5540.]—Seeing letter No. 5521 regarding "Pressure Feed to Oil Pump," I beg to give what I consider an improvement on Mr. Pollard's way. There is no need for one to fit a valve to oil tank stopper. First make the stopper pressure tight with a soft leather washer, and proceed as follows: Depress pump, open tap to crank case, lift pump, and then the same will be filled with air drawn from crank case; then open tap to tank and depress. This pumps air into tank—is that not so? Repeat the operation, say a dozen times or so, till one considers there is sufficient pressure there—only don't overdo it. The oiling then becomes semi-automatic; when engine needs oil open tap-way to tank. The pressure then fills pump. On opening tap-way to crank case the oil very slowly runs into crank case—by gravity. I can recommend this dodge, having found it quite successful. D. REFFELL.

[Modern pumps are not usually fitted with a two-way tap, in which case our first correspondent's suggestion would appear to be the better one.—ED.]

SUMMARY OF CORRESPONDENCE.

"A.W.S." (Palmers Green) would be glad if the owner of Zenith LB 2442 would satisfy his curiosity, and inform him what he uses the glass bottle for, which is held in a pump clip attached to the seat-tube.

E. A. Colliver writes: "My failure in Class 2 of the Herts County members' hill-climb was in no way due to the fault of the machine. Half-way up it began to misfire and stop. On making investigations, I found that the central pole of the plug had worked loose and that the current was shorting, thus causing the machine to stop immediately. The next two ascents were quite without incident, the machine taking the hill with comparative ease."

EDITORIAL NOTICE.

As we receive many more letters weekly than we can find space for, correspondents are urged to be brief and to the point. We may add that in selecting letters those bearing the writer's signature for publication are given preference.

CURRENT CHAT

TIME TO LIGHT LAMPS

(GREENWICH)

Apr. 13th	...	...	6.59 p.m.
,, 15th	...	...	7.3 p.m.
,, 17th	...	...	7.6 p.m.
,, 19th	...	...	7.9 p.m.

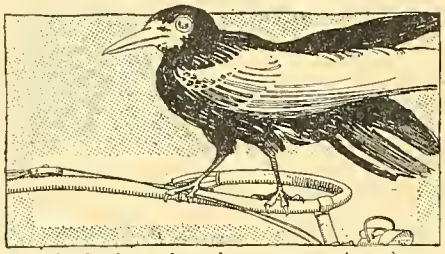
SPECIAL FEATURES

Oxford M.C.C. Open Hill-climb.

Yorkshire as She is Spoke.

The Lady Motor Cyclist

The "Ideal" Motor Cycle: A Criticism.



Dutch Motor Cyclists' Visit.

Much interest is being taken in Amsterdam, in connection with the club outing of the Dutch Motor Cycle Club to the Isle of Man on the occasion of the Tourist Trophy Races. The members will land at Harwich, and tour *via* the Midlands to Liverpool.

Auto Cycle Union News.

The following officers have been elected for 1911: Chairman, Mr. Robert Todd; vice-chairmen, Messrs. V. Hart, H. P. E. Harding, J. R. Nisbet, and C. A. Smith; hon. treasurer, Mr. C. A. Smith.

AFFILIATIONS. — The following clubs have been accepted for affiliation, subject to their rules being in order: The Chesterfield and District M.C.C., the South-east London M.C.C., the Redditch and District M.C.C., and the Herefordshire M.C.C.

A PROPOSED ASSOCIATES' RACE MEETING AT BROOKLANDS.—It is suggested that the Royal Automobile Club should organise an associates' race meeting at Brooklands on July 29th, the idea being that each associated club should send three cars to represent it in various races and this contest being run off, clubs affiliated to the A.C.U. should be represented by their hill tests to compete for a valuable challenge trophy. It was proposed that in the event of motor cyclist members in like manner, a proposal which we sincerely hope will be adopted.

THE SCARBOROUGH AND DISTRICT M.C. OPEN HILL-CLIMB.—The A.C.U. Committee has noticed that the above event has been announced as being about to be held under the rules of the Northern League. Should the contest be held without a permit being granted by the A.C.U. it will be proclaimed. All open events must be held under the competition rules of the governing body.

MEMBERSHIP.—The A.C.U. membership continues to increase rapidly. One hundred and seventy-eight members were elected at the last committee meeting.

THE ROAD BOARD.—The Auto Cycle Union has been invited by the Road Board to send representatives to the preliminary meeting of the Third International Road Congress, to be held on May 3rd. Messrs. A. Sharp, V. Hart and F. Straight will represent the Union.

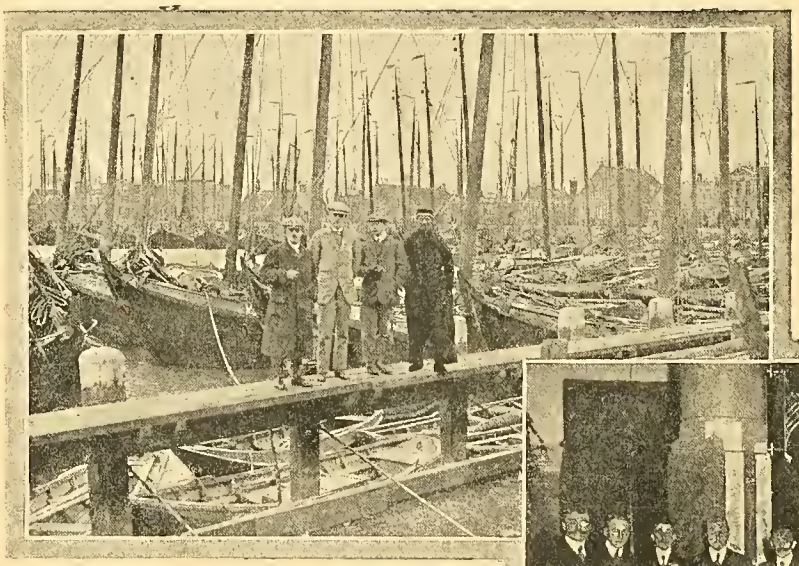
THE NATIONAL AUTOMOBILE COUNCIL.—The above body is composed of representatives from all the motoring organisations, including the A.C.U. Messrs. V. Hart and E. M. P. Boileau represent the A.C.U., and at a deputation called to deal with the taxation conference which is shortly expected to be introduced to the Chancellor of the Exchequer they will represent the interests of motor cyclists.

A NEW ROAD BOOK.—An offer from Mr. E. J. Burrows to supply a number of copies of his new handbook to be published under the auspices of the A.C.U. has been accepted.

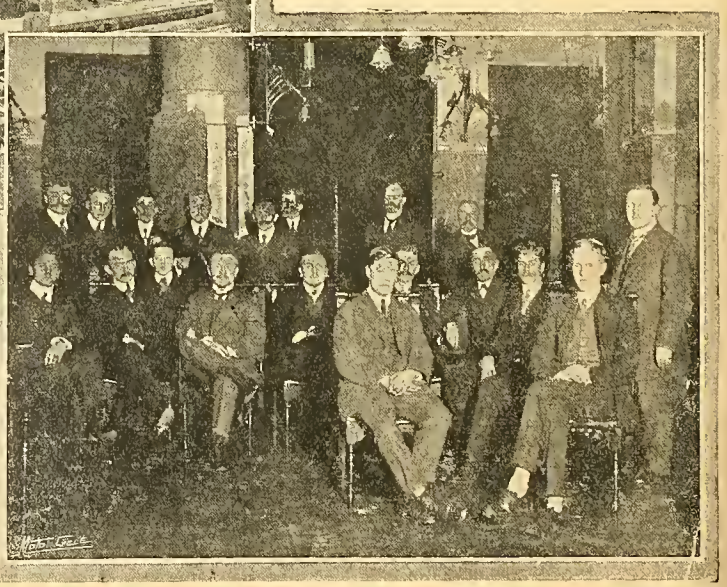
The Seventh Annual Team Trial.

It will interest those 108 riders who competed in the last event to know that this year's team trial will be more in the nature of a speed-judging competition, the M.C.C. having decided to prohibit the use of watches, speedometers or mileage recorders. It is a sign of the times to abolish the system of riding to a split second schedule.

THE DOINGS OF THE DUTCH M.C.C.



At Volendam, the noted fishing place on the Zuider-Zee. Left to right: Mr. Citroen, Mr. Wollaston, Lord Doune, and an old Volendammer fisherman.



Gathering on the occasion of the lantern evening at Amsterdam of the Dutch M.C.C. In the foreground are two British motor cyclists, viz., Mr. Wollaston, of Cambridge, and Lord Doune. Mr. A. Citroen, hon. sec. of the Dutch M.C.C., is at the extreme right.

erman Road Tolls.

Tells are practically extinct in this ountry, but they flourish in Germany. or example, one hundred and eighty illages impose tolls on motor vehicles be- ore they are allewed to pass through the istrict. Between Nuremberg and Wen- erstein (seven or eight miles) the toll 1s., whereas one can travel the istance by rail for 5d.

he London-Land's End Trial.

Most of those who competed in last ear's Jarrott Cup Competition have ntered again, which proves the sporting iture of the M.C.C. run. Quite a mber of sidecarists appear on the try list, so that Messrs. Gwynne and ed's cup will be presented in this ction. The start will be from the ridge House Hotel, Staines, where bed d early breakfast have been arranged. difficulty was experienced in fixing commodation at Cranford Bridge.

he Motor Cycle in Germany.

Our German correspondent writes that Körber's explanation respecting the otor cycle's lack of popularity in Ger- ny is hardly correct. Whether the otor cycle pastime might develop more der the stimulus of a Saturday holiday, he says, a matter which may be waived the present case. Germany has never d the half-holiday in question; the stime boomed a few years ago.

Private Speed Match.

A few days ago a private match was tled on Midland roads between two car owners, one driving a 6 h.p. nger and the other an A.C. tricar. The C. having a smaller engine received a rt of one minute on a five miles course. e ceurse was a secluded one and well rshalled. The result was that the A.C. n by forty seconds.

M.C.R.C. Second 1911 Meeting.

The second B.M.C.R.C. Meeting of 11 will be held on the 26th inst. The lowing races have been arranged:
5 p.m.—Second One Hour Junior T.T.
4.15 p.m.—Four-lap Relay Race: One h single and multi-cylinder to com- e; the combined cylinder capacity not exceed 1,500 c.c.
4.45 p.m.—Second One Hour Senior T. Race.
In both Junior and Senior T.T. Races machines must comply with the est regulations issued by the Auto cle Union for the government of the mpetition.

yal Pardon under the Motor Car Act.

In *The Motor Cycle* of December 2nd t, we referred to the Cumbernauld lision case. Motor cyclists will doubt- s remember that a car driver named Jas. nn was fined £5 and his licence iersed in a case which came before eriff Blair, of Dumbarton. The case s appealed against, and the High Court, hough they had no power to upset the nviction, decided to bring the case be- e the Secretary for Scotland. This was ie, and His Majesty the King has been ased to grant James Dunn a free don; the fine of £5 has been returned his endorsed licence whitewashed. s is the first Royal pardon for an nce under the Motor Car Acts, and result is most satisfactory. Let us hope it will have a salutary effect in a district which is well known to motorists as a notorious one.

FUTURE EVENTS.

Apl. 14.—(Good Friday). Annual Meeting of Northern Clubs at Richmond, Yorks.
,, 14-17.—M.C.C. London-Land's End Trial and Easter Run.
,, 14-17.—Herts. County A.C. Inter-club Tour to Harrogate and back, first Ladies' Competition, and Open Hill Climb.
,, 17.—Westmorland M.C.C. Open Hill Climb on Shap Fell.
,, 22.—A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
,, 29.—Bristol B. & M.C. Open Hill Climb.
May 6.—Herts. County A.C. Open Hill Climb.
,, 27.—Herts. County A.C. Open Speed Trials.
June 10.—Birmingham M.C.C. Open Hill Climb, Shelsley Walsh.
,, 17.—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
July 8.—A.C.U. Metropolitan Centre Eliminating Trial for Club Championship.

Another Accident due to Fast Speed.

Another distressing accident occurred between Kenilworth and Berkswell (Warwickshire) last Sunday, three riders being involved, names not known, but two were riding Ariels (and said to be testers), the other being a Triumph. The collision, it is said, was due to travelling at too fast a speed round a blind corner. The impact severely injured two (one was not expected to recover), another escaped with a broken arm and leg, and the third was also severely hurt. Once again we would in all seriousness urge motor cyclists to travel with the utmost caution. RISK NOTHING FOR YOUR OWN SAFETY'S SAKE.

Exports and Imports.

The number of motor cycles exported during the month ended March 31st has doubled, as well as the value. The figures are:

	1909.	1910.	1911.
Number ...	122	212	426
Value complete machines—	£4,357	£7,560	£14,507
Value parts—	£3,272	£2,901	£4,932
	£7.629	£10,461	£19,439

For the three months ended March 31st the total figures are:

	1909.	1910.	1911.
Number ...	316	630	1,393
Value complete machines—	£10,876	£22,818	£50,451
Parts ...	£7,720	£8,088	£13,636
Total ...	£18,596	£30,906	£64,087

Imports.

The imports have slightly increased, but not to anything like the same extent as the exports. For three months ended March 31st:

	1909.	1910.	1911.
Number ...	269	346	409
Value complete machines—	£7,240	£10,591	£12,367
Parts ...	£6,119	£14,206	£16,186
Total ...	£13,359	£24,797	£23,555

The value of foreign and colonial re exports fer the three months is:
Motor cycles and parts—

1909.	1910.	1911.
£5,199	£1,305	£2,30

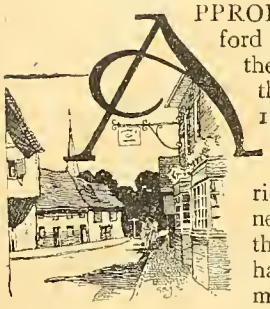
OXFORD M.C.C. HILL-CLIMB AT KOP HILL, PRINCES RISBOROUGH.

Looking up the hill. H. Newey (two-stroke Levis lightweight) about half way up.

OPENING HILL-CLIMB OF 1911.

Fastest Time by a Single-cylinder. A Startling Revelation.

RECORD ENTRY.



APPROPRIATELY enough, the Oxford M.C.C. first open hill-climb of the year attracted a record entry, the list totalling no fewer than 142. As may be expected, competition was keen, most of the leading firms with their crack riders appearing. Kop Hill, near Princes Risborough, was the venue selected, this ascent having lately come into prominence by successive closed events. It is ideally situated for a competition of this kind, and from a spectacular point of view probably has no equal. With a good surface devoid of ruts, comparatively smooth as steep hills go, and practically straight, nothing is against the highest speeds on this Chiltern acclivity but the gradient, which, at two points, approximates to 1 in 5. The measured stretch was nearly threequarters of a mile. The weather was fine on Saturday, but a fairly strong N.E. wind blew in the faces of the competitors.

Among the hundreds who lined the banks at the roadside were Lord Effingham and Lord Macclesfield, who took an active interest in the proceedings.

Single-cylinders to the Front.

Weighing operations were completed during the morning at the foot of the hill, and disclosed the fact that a number of wide-awake riders had weighted up their machines with the idea of scoring on formula, for it is a well-known fact that the A.C.U. formula favours the heavy machine with a small engine. For instance, W. F. Newsome, who is a light rider, scaled with his touring Triumph 427 lbs. He won Classes V. and VIII. on formula—there was no time award offered. The analysed results of the event once again prove the extraordinary efficiency of the single-cylinder mount, for history repeated itself, the fastest time of the day being accomplished on a 3½ h.p. single-cylinder Triumph—all credit to H. Lister Cooper, who beat twins up to 8 h.p.

P. Brewster led off the ball in Class V on a 3½ h.p. Norton. The start was on a slight up-grade, about fifty yards being allowed in which to get going. Slaughter (L.M.C.) and Newsome (Triumph), two old stable companions, made particularly fine ascents, but the real sensation in this class was by the seventeen year old son of S. Crawley, the Bedford agent, who tore up the hill at an astonishing speed, actually the fastest in this class and faster than 75% of the T.T. riders. A B.S.A. was out for the first time in open competition, its rider, L. L. Sealey, creating an excellent impression, but causing the spectators to scatter in all directions when he performed his fantastic feat of laying along the top of his machine with his toes tucked under the top rails of the luggage carrier. Rupert May, who tips 17 stones in the scales, made a splendid climb. There was but one failure. We give below the order of the first dozen:

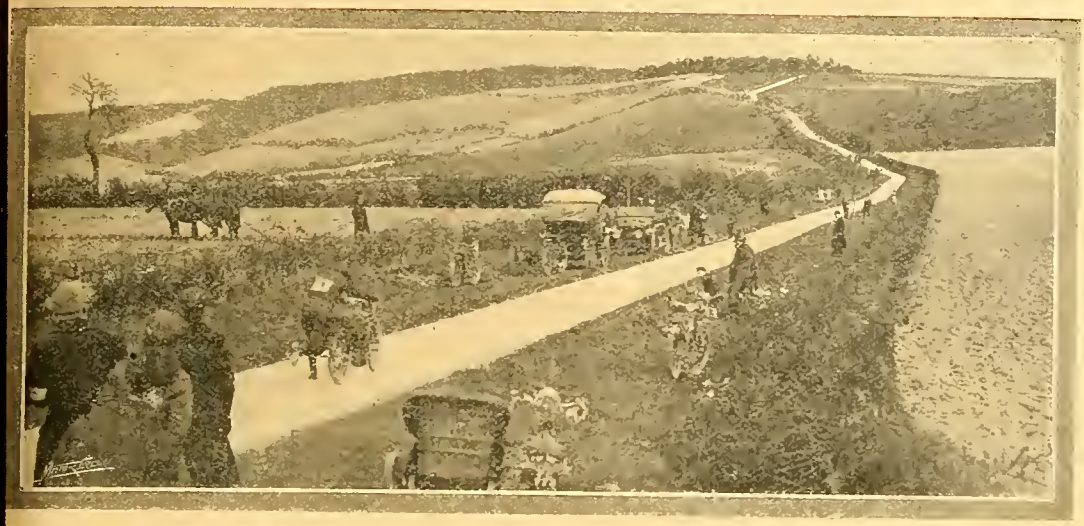
CLASS V.—Standard single-geared touring single-cylinder machines. First on formula—gold medal (presented by the Triumph Cycle Co., Ltd.) Second on formula—club silver medal. Third on formula—club bronze medal. Best performance on formula by private owner—Cowey speedometer (presented by the Cowey Engineering Co., Ltd.). Best performance on formula by club member—pair Kempshall covers (presented by the Kempshall Tyre Co., Ltd.) Thirty-two competitors.

	Name and Machine.	Time.	Fig. Merit.
1.	W. F. Newsome (1911 Triumph) ...	47 3/5s. ...	55.62
2.	J. H. Slaughter (3½ L.M.C.)	47 4/5s. ...	67.8
3.	Rupert May (1911 Triumph)	60 4/5s. ...	70.8*
4.	W. F. Guiver (3½ Kerry-Abingdon) ...	56 3/5s. ...	71.87
5.	J. E. Webb (1910 Triumph)	59 1/5s. ...	74.4†
6.	B. Crone (3½ Kerry-Abingdon) ...	54 2/5s. ...	77.82
7.	H. G. Hill (89 × 89 Bradbury) ...	52 4/5s. ...	79.27
8.	S. Crawley (1911 Triumph)	46 2/5s. ...	79.9
9.	L. L. Sealey (3½ B.S.A.)	51 3/5s. ...	80.5
10.	Sam Wright (3½ Humber)	60 4/5s. ...	80.9
11.	C. S. Burney (3½ Rudge)	62 1/5s. ...	83.2
12.	H. S. Askew (3½ Triumph)	57 2/5s. ...	83.5

*First private owner. †First club member.

General view at the foot of Kop Hill, Princes Risboro', before the start. The hill is reached by following the turning to the left.

Opening Hill-climb of 1911.—



W. F. Newsome (3½ h.p. Triumph) starting in the touring class which he won The starting banner may be seen just beyond the cars.

The Junior T.T. Lightweights.

Junior T.T. machines followed, but at a considerably slower pace than the touring singles. The New Hudson machines had J.A.P. engines, mostly with overhead valves, and performed splendidly with a fine turn of speed on the direct drive of the Armstrong-Triplex gear. F. W. Barnes's Zenith missed badly at the start, but once the engine settled down, the rider accelerated in the manner only possible with a Gradua gear. Howard Newey's tiny two-stroke Levis caused much interest, the unsilenced engine crackling like a racing car. This machine is remarkably low built—in fact, a tall man might touch the ground with his knees on corners! Result:

CLASS I.—Junior T.T. Machines. Singles up to 300 c.c., twins 340 c.c. Fastest time, club gold medal. Twelve competitors.

		Secs.
1.	H. G. Dixon (2½ New Hudson)	X
	J. W. Woodhouse (2½ New Hudson) ...	+ 1⅖
	F. W. Smith (2¾ Enfield)	+ 6
	Geo. Griffith (2¾ M.-R.)	+ 9⅗
	Cyril Patteson (2¾ M.-R.)	+ 10
	F. W. Barnes (2½ Zenith)	+ 17⅖

Interest Sustained.

There was some slight delay in starting Class III., but otherwise the competitors were despatched with commendable promptitude, and interest never waned. It was in this class that Lister Cooper—an amateur—made fastest time from among a galaxy of talent, backed up by Rhys, another amateur, who was not thoroughly happy with his machine during the morning. Slaughter (L.M.C.), Gordon Bell (Triumph), and Stanley (Singer) were others who seemed to maintain the same speed the whole way up. For once in a way that veteran Barnes and his Zenith-Gradua had to acknowledge defeat. McMinnies, with his 1910 Triumph fresh from the works, did well, but Howard Smith swerved badly owing to fouling a large stone, losing valuable seconds; F. G. Edmond (Premier) also suffered misfortune with a choked petrol supply. V. Surridge (Rudge) did not seem so well to the front as on the occasion of the Brooklands meeting, but J. Gibson on a similar machine was appreciably faster. The first nine competitors are given in their order of merit on next page.

F. W. Smith (2¾ h.p. two-speed Enfield) going well at the top. He won two first awards.

Opening Hill-climb of 1911.—

J. H. Slaughter (3½ h.p. L.M.C.) second in Class V. travelling at high speed. Mr. Lloyd, the designer of the L.M.C., is standing at the extreme right.

CLASS III.—T.T. single-cylinder machines up to 500 c.c. First on time, gold medal presented by the Premier Cycle Co., Ltd. Second on time, club silver medal. Fastest time by private owner, Rex silver cigarette case presented by the Rex Motor Mfg. Co., Ltd. Twenty-two competitors.

		Secs.
1.	Lister Cooper (3½ Triumph)	X
2.	W. L. T. Rhys (3½ Triumph) ... ... +	$2\frac{2}{5}$
3.	W. F. Newsome (3½ Triumph) ... ... +	$2\frac{4}{5}$
	G. E. Stanley (3½ Singer) ... ... +	$3\frac{1}{5}$
	W. G. McMinnies (3½ Triumph) } ... +	$5\frac{1}{5}$
	C. Gordon Bell (3½ Triumph) ... }	
	J. H. Slaughter (L.M.C.) ... ... +	$6\frac{2}{5}$
	J. W. Tolloday (3½ Triumph) ... } ... +	$6\frac{4}{5}$
	F. W. Barnes (3½ Zenith-Gradua) }	

The standard single-geared twin class demonstrated the extra speed of the latest Enfield, the machine ridden by F. W. Smith making light of the gradient. O. C. Godfrey, as may perhaps be expected, accomplished fastest time on his 5 h.p. Indian, though G. L. Piercy Henderson might have beaten him but for a choked jet fifty yards from the finishing banner. Result:

CLASS VI.—Standard single-geared touring twin-cylinder machines. First on formula, club gold medal. Ten competitors.

	Rider and Machine.	Secs.	Fig. of Merit.
1.	F. W. Smith (2¾ Enfield)	$67\frac{1}{5}$	80.6
2.	O. C. Godfrey (5 Indian)	47	91.7
3.	R. H. Viggers (2¾ Enfield)	$69\frac{4}{5}$	97.2

Several Failures in the Restarting Test.

The variably geared machines were not numerous, and most of those who did ride stopped their engines in restarting on the gradient after the compulsory stop. The failures were due to (1) over-anxiety, (2) careless manipulation of control levers, and (3) miniature clutches. Barnes seemed to misunderstand the official signal to restart and lost time thereby, whilst R. Jones (Ariel) rushed blindly past the red flag and over the line before remembering the rules. Percy Yates, the only one of four three-speed gear users to restart successfully, proved the winner. Result:

CLASS VII.—Standard touring single and twin, fitted with variable gears. First on formula, gold medal presented by the Service Co., Ltd. Fifteen competitors.

	Rider and Machine.	Secs.	Fig of Merit.
1.	Percy Yates (2¾ New Hudson) ...	$84\frac{2}{5}$	85.6
2.	F. W. Barnes (3½ Zenith-Gradua) ...	$70\frac{3}{5}$	96.5
3.	Alan Hill (3½ Rudge)	$78\frac{2}{5}$	108.6
4.	H. Greaves (2¾ Enfield)	$85\frac{1}{5}$	112.2
5.	B. Yates (3½ Humber)	89	116.8
6.	H. Rem Fowler (2½ New Hudson) ...	$131\frac{2}{5}$	140.5

One or two of the touring "lightweights" exceeded the maximum of 130 lbs. and were disqualified, others needed slight assistance, especially hard luck being experienced by J. S. Holroyd (Motosacoche) and H. Berwick (Humber), who gave but a couple of digs with the pedals and were consequently disqualified. The latter would have won but for pedalling. Again the two-speed Enfield riders shone, the best of the Douglas clan being Eli Clark. Result:

CLASS II.—Standard touring lightweights up to 130 lbs. First on formula, club gold medal. Second on formula, club silver medal. Fifteen competitors.

	Name and Machine.	Time.	Fig. of Merit
1.	F. W. Smith (2¾ Enfield) ...	69s. ...	79.9
2.	H. G. Dixon (2½ New Hudson)	$80\frac{3}{5}$s. ...	85.9
3.	R. H. Viggers (2¾ Enfield) ...	$65\frac{4}{5}$s. ...	91.7
4.	Percy Yates (2½ New Hudson)	96s. ...	95.9
5.	Eli Clark (2¾ Douglas) ...	$93\frac{4}{5}$s. ...	102.5
6.	H. J. Cox (2¾ Forward) ...	$91\frac{3}{5}$s. ...	106.7

The *pièce de résistance* was the open event with forty-one competitors, from Holroyd's "sausage" to Miss Hind's 7 h.p. Rex, W. D. South's 7 h.p. Indian, and Percy Henderson's 8 h.p. J.A.P.: not that the twins stood an earthly chance of winning on formula—the only prizes offered—but their entry demonstrates that glory is the dominant spirit of the English

H. Lister-Cooper (3½ h.p. T.T. Triumph) the fastest amateur, on the last steep pitch.

pening Hill-climb of 1911.—

mateur sportsman. H. G. Hill (the trials hon. sec.) nade one of the best showings, and would have added o his successes in Class V. but for an astonishing evelopment, of which more anon. Henderson wobbled adly near the top on his big J.A.P. We can admire Miss Hind's pluck in riding a 7 h.p. Rex with her sual daring—she took 57 secs.—but we have very rave doubts whether any lady spectator would be any-ing but thrilled by such an exploit. Sealey again rapped his legs about the carrier, and again Holroyd ound the hill two strokes of the pedals too good for im. Of the Triumphites, Lister Cooper was rather ightly slower still, albeit going great guns. Newsome asily won through his foresight in carrying lead plates. . D. South's ascent on a 7 h.p. Indian gained the audits of the spectators, and although fastest in this ass was 1⅕s. behind Lister Cooper's first ascent. esult.

LASS VIII.—Any type of single or twin up to 1,000 c.c. First on formula, gold medal (presented by Singer and Co., Ltd.) Second on formula, club silver medal. Third on formula, club bronze medal. Best performance on formula by a private owner, pair Michelin Tri lent covers (presented by the Michelin Tyre Co., Ltd.) Second best performance on formula by a private owner, suit of overalls (presented by Alf. Dunhill, Ltd.) Best performance on formula by a club member, club silver medal. Forty-one competitors.

Rider and Machine.	Secs.	Fig. of Merit.
W. F. Newsome (3½ Triumph)	47	57.9
W. G. McMinnies (3½ Triumph)	47	70.6
H. Lister Cooper (3½ Triumph)	46⅕	70.8
John Gibson (3½ Rudge)	51⅘	71.2
J. H. Slaughter (3½ L.M.C.)	49⅗	73.4
H. G. Hill (89 × 89 Bradbury)	49	73.5
P. Brewster (3½ Norton)	51	73.5
C. Gordon Bell (3½ Norton)	52⅖	75.7
F. W. Barnes (3½ Zenith-Gradua)	55⅗	76
G. E. Stanley (3½ Singer)	47	76.9
L. L. Sealey (3½ B.S.A.)	52⅕	81.4
G. F. Cooper (3½ Triumph)	57⅕	81.6

A Weakness of the A.C.U. Formula.

It will be noticed that no twin appears in the first zen, which is not so much due to lack of speed as the shortcomings of the A.C.U. formula. That ortsman, Percy Butler, of Manchester, was actually e first twin rider on his chain-driven T.T. Dot-p (time 49⅕s.), O. C. Godfrey (5 h.p. Indian) being xt (47⅗s.)

Repairing to the George and Dragon the news went und like wildfire that an objection had been lodged ainst the eight Bradbury machines and the £4 4s. id—this without waiting to see whether the results re affected. After some trepidation the competitors owed their cylinders to be measured—they having tered them in good faith as 87 by 87 mm.—and lo d behold, they were found to be 89 by 89 mm.! eir chagrin—especially H. G. Hill's, who had won 15 worth of prizes—can best be imagined. Calcu-ed as 554 c.c. capacity, Hill just missed each of e amateur awards, and is to be sympathised with.

On Saturday evening the results were provisionally nounced, but the positions were afterwards found be incorrect. We are enabled to give the revised d official placings above, and for this privilege owe r thanks to Messrs. H. R. Webb—the Davis slide e expert—and H. G. Hill, the trials hon. sec.

BROOKLANDS EASTER MONDAY MEETING.

There are seven car races, two motor cycle races, and a flying competition at the Brooklands meeting on the 17th inst. The first race is at 2 p.m., followed by the 65 m.p.h. motor cycle handicap at 2.25 p.m. Entries are as under:

2.25 P.M.—THE SECOND 65 M.P.H. MOTOR CYCLE HANDICAP.

Name, cylinders, and machine.	Bore.	Stroke.
W. D. Johnstone (2-cyl. Matchless)	85½	× 65
O. C. Godfrey (2 Indian)	70	× 82½
J. Fowles (1 Martin)	85½	× 60
F. W. Davrell (1 Martin)	85½	× 60
N. Gray (1 Triumph)	85	× 88
H. Shanks, jun. (1 Kingfisher)	85	× 60
F. C. White (1 J.A.P.)	75	× 75
R. Croucher (1 Kerry-Abingdon)	85	× 88
C. R. Collier (1 Matchless)	85½	× 85
H. A. Collier (2 Matchless)	76	× 64
H. V. Colver (1 Matchless)	76	× 64
F. P. Johnson (2 Matchless)	67	× 83
F. A. McNab (1 Trump-Jap)	85½	× 85
A. B. White (1 Trump-Jap)	85½	× 85
C. E. Peach (1 Minerva)	76	× 76
J. L. Stocks (1 Triumph)	85	× 88
R. N. Stewart (1 Trump-Jap)	85	× 85
V. J. Surridge (1 Rudge)	85	× 88
A. L. Ommanney (1 Rudge)	85	× 88
W. Dewar (1 Triumph)	85	× 88
W. Pollard (1 Quadrant)	81	× 88
A. J. Tickner (1 Buchet)	76	× 73
P. V. Wallis (2 N.S.U.-King)	60	× 70
A. Brunton (1 New Century)	76	× 76
M. Brunton (2 Bat)	85	× 65
W. S. Stafford (1 Triumph)	84	× 86
H. H. Bowen (1 Bat)	85½	× 85
H. S. Gaskell (1 Triumph)	85	× 88
J. Gibson (1 Rudge)	85	× 88
Roy W. Walker (1 Triumph)	85	× 88
Eric D. Tate (1 N.L.G.)	85	× 85
H. G. Partridge (2 N.S.U.)	52	× 74
K. Holden (1 B.S.A.)	85	× 88
V. Wilberforce (1 N.L.G.)	76	× 65½

4.5 P.M.—THE FOURTH 70 M.P.H. HANDICAP.

W. D. Johnstone (2-cyl. Matchless)	85½	× 65
O. C. Godfrey (2 Indian)	82½	× 93
C. R. Collier (2 Matchless)	85½	× 85
H. A. Collier (2 Matchless)	76	× 64
H. V. Colver (2 Matchless)	85½	× 85
F. P. Johnson (2 Matchless)	67	× 83
F. A. McNab (1 Trump-Jap)	85½	× 85
A. Baker White (1 Trump-Jap)	85½	× 85
V. J. Surridge (1 Rudge)	85	× 88
A. L. Ommanney (1 Rudge)	85	× 88
R. N. Stewart (1 Trump-Jap)	85	× 85
W. Dewar (2 Kenilworth-Zedel)	85	× 85
C. R. Taylor (2 Indian)	70	× 83
G. Fowler (2 Bat)	85	× 85
H. G. Partridge (2 N.S.U.)	75	× 90
R. K. Jones (2 Bat)	85	× 85
H. S. Wallis (1 Vin-Jap)	85	× 60
J. Gibson (1 Rudge)	85	× 88
R. W. Walker (1 Triumph)	85	× 85
Eric D. Tate (1 N.L.G.)	85	× 88
M. Geiger (2 N.S.U.)	80	× 99
K. Holden (1 B.S.A.)	85	× 88

THE FIRST LADIES' COMPETITION.

The ranks of the ladies for the trial to Harrogate and back which commences to-morrow will be somewhat depleted, as Mrs. De Lissa is ill, and another lady has found a defect in the cylinder of her machine. However, Miss R. Hammett, Mrs. Wade, Miss L. Berend, and Mrs. Cather Cooke are certain starters in the double journey, and several other ladies are joining *en route*.

THE MODERN MOTOR CYCLE.

ONE of the most interesting papers ever read on the subject was delivered before the members of the Woolwich Polytechnic Engineering Society by Mr. T. W. Loughborough, honorary secretary of the British Motor Cycle Racing Club on Thursday last, entitled "The Modern Motor Cycle." Mr. C. R. Matthews presided.

Dealing first of all with economy, the lecturer made the statement that for runs of over one hundred miles travelling by motor cycle is cheaper than train or pedal cycle. The railway fare from London to Bristol is 9s. 9½d., and comparatively few pedal cyclists could comfortably ride this distance without stopping a night, and four or five times for meals, at a cost of not less than 10s. A motor cyclist could easily ride the distance in a short day, and the total expenses should not exceed 6s. The cost of upkeep might safely be taken as not exceeding 1½d. per mile.

A Marvellous Engine.

Dealing with the efficiency of the motor cycle engine, the lecturer said taking W the combined weight of motor cycle and rider at 280 lbs., and A the area opposed to air resistance as five square feet, we can plot a curve of power required at the engine pulley for various speeds, showing the horse-power developed by W. Chitty's engine 70 by 70 mm., 269 c.c., which covered the kilometre at Brooklands last year at the rate of 52.67 m.p.h. According to this curve, the engine developed 9.2 h.p. By any of the various formulæ used for larger engines this engine should have developed one-third of that amount.

Interesting facts were also given concerning carbonisation, including the analysis of carbon deposit. Considerable space was also allotted to the important question of lubrication, dealing with the various systems in vogue and mentioning the trough system, so common now on certain makes of motor cars. The use of this, Mr. Loughborough thought, was unlikely to become general on motor cycles. Owing to the high speed and small clearance there is little, if any, liquid oil in the crank case at any time. What is there is probably "oil mist."

The Stomach of the Petrol Engine.

With regard to carburation. The carburetter, said Mr. Loughborough, is the stomach of the petrol engine, and its duty, at first sight, is a simple one. It is given a liquid fuel, approximately ninety per cent. carbon and ten per cent. hydrogen, and as much air as it wants. Theoretically, about 186 cubic feet of air for each pound of petrol—actually an excess of about fifty per cent. over this amount is required. Petrol spirit being highly volatile at ordinary temperatures, the problem seems a fairly easy one, and the volatility of petrol spirit is of greater importance than its specific gravity. The latter, the commercial standard, may vary from .680 to .785, the heavier spirit naturally taking more air, but giving a higher calorific value per pound of fuel. Several types of carburetters were then described, and a good deal of space was devoted to the question of exhaust silencing.

The paper concluded with some remarks on transmission and variable gears, the samples chosen for the description being the Zenith-Gradua variable gear and the Indian.

Mr. Loughborough concluded by saying that he had made out his case for the motor cycle as one of the hardest, cheapest, and fastest methods of locomotion of the present day. He said that if he had succeeded in pointing out the main lines along which improvement is necessary—lubrication, the avoidance of carbonisation, carburation, silence, and above all, variable gearing—he was satisfied.

An Interesting Discussion.

Mr. Foyster opened the discussion by asking the weight of the engine used by Mr. Chitty, also information regarding the use of more than one sparking plug.

Mr. W. H. Turton, M.I.C.E., said he was particularly interested in the width of the spark gap, and would like to know how much it was found in practice that the points could be separated with advantage.

Mr. G. W. Tripp, A.M.I.C.E., asked Mr. Loughborough if he knew of any method by which sparking plugs could be tested without removing them from the cylinder. He noted the resemblance between the J.A.P. and the Longuemare carburetters as to the breaking up of the petrol stream into several fine jets, but said he understood that the last-named makers were now adopting the single jet.

Mr. Wheatley asked for information as to the possibility of using steam as the motive power, and whether any machines were fitted with oscillating cylinders. He also compared the two and four-stroke types of motor, and asked if it was possible to run a motor cycle on cheap fuel.

Mr. Dicksee asked if any "free engine" motor cycles were fitted with a shock-absorbing device.

Mr. R. J. Redding, A.M.I.C.E., stated that it would be interesting to learn what materials manufacturers used for various parts of the machine, cylinders, valves, etc. He also referred to the advantage of large wheels.

Mr. Bloomfield asked the lecturer if, in the case of two-stroke engines that took in the charge *viâ* the crank case, there was experienced any trouble with lubricating oil coming over with the "mixture."

In summing up the discussion, and before calling on Mr. Loughborough to reply, the President (Mr. C. R. Matthews) remarked that the subject was one of great extent and bristled with interesting engineering problems. He reminded the members how much we owed to the pedal cycle. He was of the opinion that had the same attention been given to steam engines for light vehicles as had been devoted to the petrol engine, we should have had a much larger proportion of steam cars on the road than is the case to-day, though he doubted if the steam engine could ever be successfully applied to a motor cycle.

Mr. Loughborough's Reply.

Mr. Loughborough said he did not know the weight of Mr. Chitty's engine. Its nominal horse-power being about 3 h.p., there was no reason to expect it to weigh more than 30 lbs. What would be of more interest to know was the weight of the reciprocating parts, as this weight was undoubtedly the most important limiting factor to high piston speed. He explained Professor Watson's experiments with several sparking plugs firing the one charge, pointing out that the rapidity of combustion depended on the greatest distance of any particle of "mixture" from the nearest plug. The rapidity of flame propagation being the same in either car or cycle engine, but the above distance being so small with a single plug in the cycle engine, it was not to be expected that corresponding increments of power would be obtained by fitting more than one plug, as had been obtained in car engines.

He could not say up to what distance the spark gap could be increased with advantage. It would depend upon the resistance to leakage of all the electrical apparatus—probably a $\frac{1}{16}$in. would represent the limit for ordinary conditions. He suggested that Mr. Tripp could get over the difficulty of testing sparking plugs *in situ* by fixing a glass window to the combustion chamber.

He had not touched on the two-stroke type of engine because as yet they were not commonly met with. The Scott was a successful example, and the smooth torque obtained by this type of engine was its strong feature. Its efficiency, however, was lower than that of the Otto cycle.

The question of a cheaper fuel than petrol was really not worth considering, as a motor cycle will run 80 to 100 miles to the gallon. Paraffin or, with more ease, benzoline, could be burnt if necessary. Shock-absorbing devices were frequently fitted and were necessary with positive drives.

As to materials, steel had been tried for cylinders, but given up owing to its warping with the heat. Cast iron was found to be the best material. A composite valve, cast iron head, and steel stem had been used considerably. The difficulty, of course, was to prevent head and stem parting, the more usual practice was to use a 20 per cent. to 25 per cent. nickel steel solid valve.

Large wheels were undoubtedly more comfortable, and 28in. wheels were fitted as standard to the Indian motor cycles. As, however, it was desirable to be able to "straddle" the machine with both feet on the ground larger wheels than 28in. could not conveniently be used. He believed that earlier designs of two-stroke engines suffered from excessive carbonisation, due to over-lubrication. This had now been got over by fitting suitable baffles, and what oil did come over with the mixture was beneficial.

The Inter-team Trial to Harrogate.

The team to represent the North-west London M.C.C. in e inter-club Easter tour to Harrogate for the Service Cup ill be selected from the following entrants:

SINGLES.

. J. Dreydel (3½ Premier)	L. Joiner (3½ Brown)
G. Westacott (3½ Triumph)	W. C. Davenport (3½ Triumph)
H. Asling (3½ Bradbury)	Glynn Rowden (3½ T.T. Triumph)
. E. Purchase (3½ Triumph)	
. J. Pooley (3½ Premier)	

LIGHTWEIGHTS.

. H. Hollis (2¾ two-speed Douglas)	J. W. Thomas (2¾ two-speed Douglas)

TWINS.

. M. Simpson (7 Indian)	H. C. Bean (6 Matchless)
. L. Printz (6 Bat)	Hal Hill (5 Bat)

PASSENGER MACHINES.

. S. Phillips (7 V.S. and sidecar)	C. Williams (8 Chater Lea and sidecar)

The following is the Herts County A.C. (motor cycle ction) team to compete against the above:

. C. Jarvis (3½ Triumph)	H. Greaves (2¾ Royal Enfield)
. S. Carter (5 Matchless)	J. S. Harwood (3 Wanderer)
. C. Cooke (3½ Triumph)	C. M. Down (5 Indian)
. Lister Cooper (3½ Triumph)	E. A. Colliver (3½ Zenith)
ert Yates (3½ Humber)	F. A. Hardy (5 V.S.)
T. Tessier (5 Bat)	W. Cooper (3½ Bradbury)

The start is from Barnet at 7.30 a.m. to-morrow (Friday): he first 34 miles will be non-stop; the second breakfast is ranged at Biggleswade; lunch, Angel Hotel, Bourne. The ute thereafter is *viâ* Sleaford, Lincoln, and Doncaster heck). Competitors arrive at Harrogate at about 6.30 m. Headquarters, Clarendon Hotel, Harrogate. There ill be nearly a hundred making the journey, and three ficial cars have been engaged. Messrs. Straight and Hall ill be the timekeepers throughout.

For the open hill-climb on Easter Saturday there are over 0 entries. Owing to the state of the surface of Sutton nk, it is impossible to use it. A fine hill has been found Mr. Felix Scriven near Bolton Abbey, Halton Moor. It is about a mile long. Weighing in will take place at the Clarendon Hotel, Harrogate, beginning at 10 a.m. and closing at 1 p.m.

The following clubs will be represented in the hill-climb: Bradford, Ilkley, Herts County, Harrogate and District, North-west London, and North Middlesex.

Mrs. Newbury on her two-speed Douglas. This lady took part in the North-west London M.C.C. consumption trial and performed very creditably.

CLUB NEWS.

Bradford M.C.C.

Some very interesting racing took place on Saturday afternoon in the Minor Handicap Hill-climb. The winner proved be J. Hargreaves, on a T.T. Triumph, who had conceded to T. G. Bullus on a stripped 1911 P. and M. The nner's riding was most consistent in each event. The ird place was re-run between F. R. Sugden, on a 1910

J. Hargreaves (T.T. Triumph) winning the Bradford M.C.C. Minor Handicap at Tong on Saturday last.

urist Rex, and Charles Sidney, on a T.T. Triumph. The ter won.

The opening reliability run of the year has been arranged r to-morrow (Good Friday), from Bradford to Richmond, d will take the form of a sixty miles trial, open to members o have not previously won gold medals for reliability. start will be made from club quarters; finish Richmond rket place. Prizes, gold, silver, and bronze medals. Lunch 50 p.m., Richmond Town Hall.

Streatham and District M.C.C.

The speed-judging contest took place on April 8th in delightful weather, and was fairly well patronised. The course was twenty miles (Godstone-Grinstead-Godstone). The speeds were balloted for, and S. Bright, on a 2½ h.p. New Hudson (Armstrong-Triplex gear), proved best judge.

Woolwich, Plumstead, and District M.C.

The opening run will take place on the 16th inst. Members will meet at Fountain, Woolwich Common, at 10 a.m., and proceed to Lamberhurst. All motorists in the district are cordially invited. A very successful season is confidently looked forward to, an increase in membership of twelve having been made already. Intending members should forward their names and addresses to the hon. sec., Mr. S. C. Davis, 75, Earlshall Road, Eltham. Beginners will be particularly looked after and assisted by experienced riders.

Stroud M.C.C.

This club held an interesting non-stop run for the Charles Apperley Challenge Cup and silver clasps presented by Mr. S. Lestock Forbes. The course was an 82 miles one, *viâ* Nailsworth, Horsley, Tetbury, Cirencester, Birdlip, Cooper's Hill, Painswick, Stroud, Butterrow, Cirencester, Birdlip, Cooper's Hill, Painswick, and Stroud. The set speed was 19 miles per hour, and the minimum and maximum times allowed 3 hrs. 50 mins. and 4 hrs. 5 mins. The results were: A. H. Ratcliff, 200 marks (3½ h.p. Triumph); A. Brotheridge, 200 marks (3½ h.p. Triumph); A. B. Pavey-Smith, 180 marks (3½ h.p. Triumph), O. Greig, 155 marks (8 h.p. Matchless); N. H. S. Bengough, 146 marks (3½ h.p. Triumph); G. H. Pavey-Smith (captain), 143 marks (5-6 h.p. four-cylinder F.N.).

Club News.—

Walsall M.C.

This newly formed club has held a number of successful runs and is making good progress. On the 18th inst. a hill-climb will be held on Style Kop, near Rugeley.

Newcastle and District M.C.

The April fixtures are: April 14th, opening run to Richmond (Yorks). Meet at club house at 9 a.m.

April 17th (Easter Monday), run to Shap Fell. Open hill-climb.

April 22nd, A.C.U. Quarterly Trials. Members meet at 11 a.m., Golden Fleece, Thirsk.

Surrey M.C.C.

For the Exeter reliability trial on June 13th-14th next, the Kempshall Tyre Co. are presenting a pair of Kempshall tyres for first prize. This is in addition to the Triumph challenge cup, which is restricted to single-cylinder bicycles. For the Lyme Regis run on July 19th, Mr. McNab is presenting a silver cup, as last year. Zenith Motors, Ltd., have also promised a special gold medal for the best performance in a club hill-climb.

Burnley A.C.

A hill-climb open to members and riders resident within ten miles of Burnley will be held on April 22nd on Thorneybolme Brow, situate about five miles from Burnley, at the foot of Pendle Hill. There will be three classes, lightweights, single-cylinders, and twin-cylinders respectively, and the club gold medal will be given as first prize in each class, while a special prize of a Kempshall tyre will be given by the Kempshall Tyre Co. for fastest time of day. Information and entry forms can be obtained from the hon. trials sec., R. H. Winterbottom, Woolpack Hotel, Haslingden.

Perth and District M.C.C.

The first event—a speed-judging competition—will take place on the 17th inst., over a thirty mile course, from St. Andrews to Bridge-of-Earn. Watches and speedometers are rigidly barred, and some surprising results may be looked for. Competitors lunch together at the Victoria Café, St. Andrews, at 1 p.m., prior to the start. The club has recently invested in a massive silver challenge trophy, which for this year will be held by the winner of the All-day Reliability Trial, to be held on June 5th, over the well-known Loch Lomond route—170 miles of rather mixed going. This club is the only body in Perthshire and several of the surrounding counties representative of active auto-cycle opinion, and in consequence its membership extends over a very wide area. The hon. sec. is Mr. J. W. Robertson, 192, High Street, Perth.

North-west London M.C.C.

The annual petrol consumption trial was held on the 8th inst. on a triangular course near Stanmore, when the winner proved to be H. Karslake, on a Dreadnought, who did 27⅛ miles on 23 ozs. The second prize was won by G. H. Hollis, on a 2¾ h.p. Douglas, who did 25¾ miles on 19 ozs. Mr. Brock, of the Stanmore Motor Works, attended with his car, and was of very considerable assistance.

Cornwall M.C.C.

All motor cyclists are invited to join the opening run on Easter Monday, which starts from the Red Lion Hotel, Truro, at 10 a.m., for Bodmin, Newquay, and Perranporth. The run will include a hill-climb for which two prizes have been offered.

Essex M.C.

The opening run was held on the 9th inst. to Witham. In spite of the unfavourable weather, a very merry party assembled at the "Eagle," Snaresbrook. The journey was uneventful, but cold, and everyone was glad to see a nice fire and inviting menu at "The White Hart." After lunch a photograph was taken, and then as the weather looked like more rain, it was decided to make tracks for home.

Herts County A.C. Hill-climb.

The following are the results on A.C.U. formula of the hill-climb which took place at Kop Hill, Princes Risborough, on the 1st inst.:

DIVISION A. CLASS I.

1.	F. W. Barnes (2½ Zenith)	.065
2.	B. Yates (2 Humber)	.085
3.	J. S. Holroyd (2½ Motosacoche)	.096

CLASS II.

1.	F. W. Barnes (3½ Zenith)	.082
2.	A. E. Colliver (3½ Rudge)	.087
3.	E. A. Burney (3½ Rudge)	.091

CLASS III.

1.	Lister Cooper (3½ T.T. Triumph) ...	.074
2.	F. W. Barnes (3½ T.T. Zenith)	.0856
3.	W. Cooper (3½ Bradbury)	.0857

CLASS IV.

1.	S. T. Tessier (5 T.T. Bat) ... ... / Hal Hill (5 T.T. Bat)	.0911
2.	F. W. Barnes (Zenith)	.096
3.	G. S. Carter (5 Matchless)	.098

CLASS V.

1.	F. W. Barnes (Zenith)	.078
2.	Bert Yates (3½ Humber)	.097

CLASS VI.

1.	Lister Cooper (T.T. Triumph)	.073
2.	F. W. Barnes (T.T. Zenith)	.080
3.	W. Cooper (Bradbury)	.084

CLASS VII.

1.	Hal Hill (5 Bat)	.0893
2.	F. W. Barnes (Zenith)	.0898
3.	G. S. Carter (5 Matchless)	.099

CLASS IX. ALL COMERS ON TIME.

1.	Hal Hill (5 T.T. Bat)	X
2.	Lister Cooper (3½ T.T. Triumph) ...	⅛s.
3.	F. W. Barnes (5 Zenith)	2⅝s.

DIVISION B.

1. Dixon (3½ Moto-Crat).
2. Gutteridge (3½ Triumph).

CLASS IV.

1. Dixon (3½ Moto-Crat).
2. Jarvis (3½ Triumph).

First and second fastest time of day were done by S. Tessier and Hal Hill respectively on 5 b.p. T.T. Bats.

Competitors at the start of the petrol consumption trial of the North-west London M.C.C. last Saturday.

Inaugural run of the South-east London M.C.C. to Tunbridge Wells.

South-east London M.C.C.

The inaugural run to Tunbridge Wells was much enjoyed despite the inclement weather. To-morrow (Friday) there is a run to Folkestone at 8 a.m., and on Saturday to Wrotham at 3 p.m. An open hill-climb is announced for the 29th inst.

West of Scotland M.C.C.

The third annual Easter Tour will start from the Riddrie car terminus at 3.30 p.m. on Saturday, 15th, for Edinburgh. On Sunday the journey will be continued to Melrose *via* the North Sea Coast, Berwick (for lunch), and Kelso, and on Monday a return will be made *via* Peebles and Lanark. Mr. Frank Salvesen, 23, India Street, Charing Cross, has charge of the arrangements.

Herts County A.C. (Motor Cycle Section).

The start of the Amateur *v.* Trade competition on May 20th is from the Chequers Hotel, Uxbridge, at 8 a.m. The competitors will cover a course extending down the main Oxford Road through High Wycombe, Princes Risborough, Kop Hill, Great Missenden, Amersham, up Rectory Hill, and back to Uxbridge by the lower road. This course will be covered four times, the total distance being 200 miles. On the occasion of the first round the competitors will make the best performance they can on the test hill, and on the second round they will try and travel up the gradient as slowly as possible, alternating the fast and slow tests each round. There will also be an acceleration test of 100 yards standing start. There will be nine riders, one in each of the nine classes to represent the private owner and the other the trade, and the best performance of six to count. The classes will be as follows:

1. Lightweights of 300 c.c., weight limit 120 lbs.
2. Variable gear twins 340 c.c., weight limit 140 lbs.
3. Single gear T.T. 3½ h.p. models.
4. Variable gear 3½ h.p. models.
5. Free engine 3½ h.p. models.
6. Touring 3½ h.p. models.
7. Single gear 670 c.c. twins.
8. Variable gear twins up to 1,000 c.c.
9. Sidecar combinations.

The trade representatives invited are: J. S. Holroyd (Motosacoche), W. W. Douglas (Douglas), W. Pratt (P. and), W. F. Newsome (T.T. Triumph), B. Yates (Humber), A. Sale, S. T. Tessier (Bat), F. W. Barnes (Zenith), and H. Wells (Indian and sidecar).

Amateurs will be selected from: Harold Cox (Singer), G. L. Fletcher (Douglas), Lister Cooper (T.T. Triumph), C. C. Cooke (clutch Triumph), W. Cooper (Bradbury), A. E. Colliver (3½ h.p. Zenith), V. Wilberforce (Indian), G. S. Carter (Matchless), and the Rev. P. W. Bischoff (Zenith and sidecar).

Edinburgh and District M.C.

Pending the formation of this club, an interim Trials Committee has been appointed for making the necessary arrangements for the Scottish Six Days' Trial, which will take place from the 24th to 29th July. The acting secretary is Mr. Robert J. Good, Braefoot, Tiberton, Edinburgh, to whom all enquiries regarding this trial should be addressed.

Naval M.C.

On the 1st inst. the Naval Motor Club held a hill-climb on South Harting, which was very successful in spite of continuous rain and the hill's extremely greasy surface. The following is the order of merit by formula:

Mr. F. A. McNab (3½ Trump-Jap)	124.3*
Lt. N. D. Holbrook, R.N. (3½ Zenith-Gradua)	132.4
Lt. H. D. Simonds, R.N. (3½ Trump-Jap) ...	144.0
Lt. D. I. McGillewie, R.N. (3½ Triumph) ...	183.4
Lt. E. G. H. Du Boulay, R.N. (5 Indian) ...	189.4
Lt. H. E. Rendall, R.N. (5-6 F.N.)	200.8
Lt. T. S. V. Phillips, R.N. (2½ Motosacoche)	201.7
Mr C. Ford (3½ Triumph)	233.4

* Not a competitor.

Lt. N. D. Holbrook, R.N., put up a particularly fine performance on his 3½ h.p. Zenith-Gradua, not only winning on formula, but also making the fastest time of the day. F. A. McNab, who had very kindly consented to give a demonstration run, climbed the hill in great style on his 3½ h.p. Trump-Jap in a time which, had he been competing, would have placed him easily first on formula. In spite of the inclemency of the weather there was quite a fair attendance of spectators, five or six car members putting in an appearance.

NOTICE TO CLUB SECRETARIES.

To ensure insertion in next week's issue club notices and photographs must be posted to reach our Coventry offices first post on Tuesday morning.

Assembly for the opening run of the Stockport and District M.C.C. to Rudyard Lake.

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Treatment of Belt.

I have recently purchased a Whittle belt. Some of my friends advise me to rub it with castor oil, others tell me to leave it alone, so I would be greatly obliged if you would tell me what I ought to do?—A.M.

It would be better to treat the belt with collan oil. This is better for leather than castor oil. It should be dressed as often as is required to render the leather soft. Probably once a fortnight will be sufficient to keep it supple.

Doubtful Carburetter.

I have a 1¾ h.p. lightweight fitted with F.N. carburetter, and I notice that it misses very often. It used to go all right. The only control is the spark. Do you think if I fitted a B.B. lightweight carburetter it would improve the machine, and should I get better results on hills?—J. HUGHES.

The addition of a modern carburetter would probably greatly improve the running of the machine. Make sure, however, that the electrical part of the machine is in good order, as the trouble may not be due solely to the carburetter.

Contract Unfulfilled.

I bought a second-hand machine from a large motor cycle firm in Birmingham on the understanding it was to be delivered to me in running order. After five weeks' waiting for the machine they want me to spend £3 more than the price I gave them and have same put in running order at the makers' works. Would you please say if I can compel them to put it in running order without paying this extra cost?—G.C.F.

Our legal adviser states Mr. F. must first of all be quite certain that there was a binding contract between him and the Birmingham firm for the purchase of the motor cycle to be delivered in running order. No one could advise this without seeing the correspondence. Assuming this, your correspondent cannot be compelled to pay the £3 asked for to put the machine in running order, and the firm must either do this for him or allow your correspondent the £3 necessary, or Mr. F. can repudiate the transaction and issue a summons for the return of any money he may have already paid to the firm.

Oil Leakage.

Will you let me know the best way of packing crank case circumference to prevent oil leakage? I think the leakage at big end is due to too thick packing. —E.H.B.B.

By crank case circumference we presume you mean the crank case joint either between cylinder and crank case or the two halves of the crank case. If the leakage takes place between cylinder and crank case, fit a brown paper washer thoroughly soaked in linseed oil. The vertical joint around the circumference should be oil-tight without any packing of any kind. If it leaks there, trouble is due to imperfect machining of the parts. The only thing we can suggest is to have the two faces turned until they are an accurate fit, and when fitting together brush the surfaces with some thick boiled linseed oil before tightening up.

Uneven Firing of Twin.

I have a new 2¾ h.p. twin, a.o.i.v., and I cannot get the cylinders to fire evenly at low speeds. I imagine that this should not be difficult in spite of automatic inlet valves. Magneto is perfect, also carburetter as far as I can judge, viz., it does not flood, and the machine starts at once, but only fires evenly at a good speed. Have carefully tested inlet valve springs, and both are about equal tension, though one valve opens just a shade more than the other. Would this make all the difference? Sparking plugs are carefully adjusted, and each gives an excellent spark. I cannot throttle down below twelve miles an hour without erratic firing. The back cylinder seems a trifle stiff, and this one seems to be the one which misses. Is it possible to get slow, even running with a twin engine with automatic valves?—Y 836.

If one valve opens more than the other this might account for the irregular firing. See that both plugs have about the same gap; also check over the strength of both inlet and exhaust springs, and also make sure that the compression in both cylinders is approximately equal. We cannot account for the back cylinder being stiff, and you can only find out why definitely by taking down the cylinder. Maybe one of the piston rings is sticking or may be too tight. It is not so easy to get slow running with an engine fitted with automatic valves as if mechanically operated valves were supplied, but a.o.i.v. twins, once perfectly adjusted, will fire quite regularly at high or low speeds.

Knocking due to Pre-ignition.

There is a mystery about my 1910 model 3½ h.p. machine. Upon opening throttle (when the engine is the least bit warm) after closing it to go round corners or to slow up for any reason, the engine gives out several very loud metallic clanks—similar to the sound an anvil makes when hit with hammer and quite as loud—for which I cannot account. The machine runs perfectly otherwise and climbs splendidly, but has had this fault almost from the time of being new. I have tried reducing compression by placing extra washers under cylinder caps and plug but without effect, and as the terrific noise it makes is very annoying, I shall be glad to have your opinion, as I must admit it entirely beats me.—S.J.P.

Probably you omit to retard the spark. It is difficult otherwise to account for the knocking unless you are using a sparking plug the points of which project too far into the cylinder, get hot, and cause pre-ignition. Another possible cause is that you are geared too highly, and the engine does not get a fair chance when picking up.

High Petrol Consumption.

I would be much obliged if you would kindly answer the following questions: (1.) The petrol consumption of my two-stroke air-cooled 1910 machine is very high, being about 60 miles to the gallon. Would a smaller jet rectify this? (2.) I hear that the power of an engine varies according to the number of revolutions per minute. Therefore, would a fixed gear machine develop less power going slowly under a load, than as fast as possible without a load?—G.A.S.

(1.) The consumption of your machine is not excessive for a two-stroke, and we should recommend you to leave things as they are. There would be no harm in experimenting with a smaller jet. (2.) Certainly, what you surmise is quite correct. In the case of an internal combustion engine revolutions mean power. For example, when an engine is labouring on its high gear it is not giving nearly so much power as if the load were reduced by dropping on to a lower gear

Wipe Contacts with Plain Coil.

I should be greatly obliged if you would kindly answer the following questions: (1.) Can a plain coil be made to work satisfactorily with a wipe contact stead of a "positive make and eak" contact (such as is fitted to 2¾ h.p. F.N.)? (2.) If so, would u advise the use of a roller or plain ntact blade? (3.) Should the contact c (of steel and fibre) be lubricated prevent excessive wear, or would an erfect contact result?—R.C.S.

d 2.) No. it could not be persuaded ork with such a contact breaker; contact in the case of a plain coil be made and broken very rapidly. cannot improve on the make and k. (3.) A wipe contact breaker used a trembler coil is often designed to packed in grease.

Carburation.

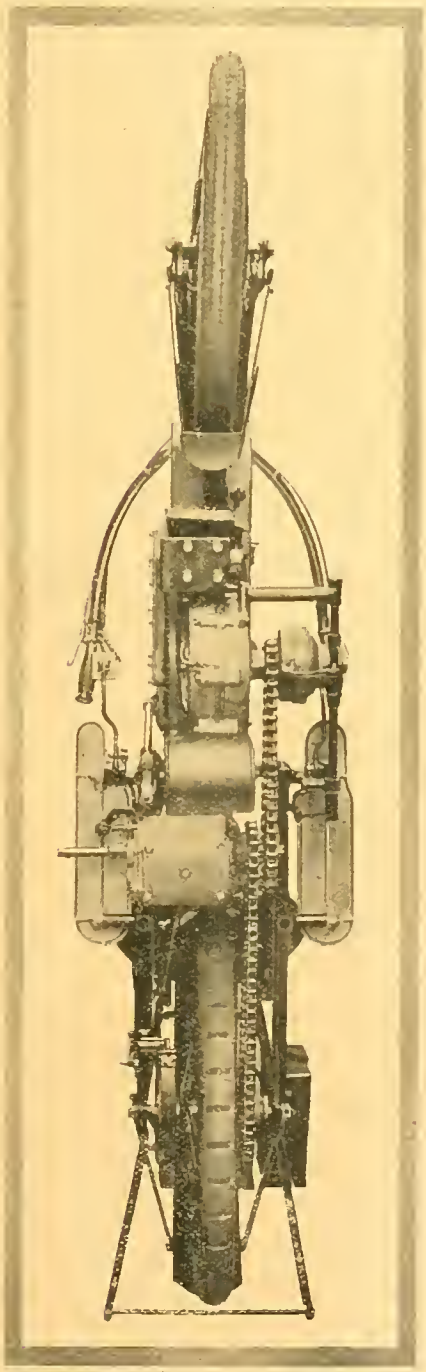
(1.) Can you enlighten me as to the best carburetter for a 7 h.p. T.A.C.? It has at present an Amac lightweight, and I cannot get it to do anything h it. How about a 3½ h.p. carretter with a smaller jet? It now very little power. (2.) The present iction pipe is straight, with the leading from the carburetter ing it in the middle between nders two and three. Now will these two cylinders do a great more work and cause Nos. 1 and be partially starved? I suggest ing two pipes from the carburetter, ed, and joining the induction pipe ween cylinders one and two and e and four. Will this improve ters at all? D.E.H.

lightweight pattern carburetter not seem the most suitable kind. doubt the 3½ h.p. type mentioned r letter would suit your purpose Better query the makers on this (2.) We do not think the arrangeof the inlet pipe would matter to onsiderable extent, but the experimight be worth trying. Often linder engines have the carburetter rear end of the induction pipe, his is when starving of the front r is likely to occur.

Clutches. Decompressors.

(1.) Is there on the market any kind of free engine clutch for motor cycles that will start from rest, without pushing or pedalling, a motor cycle and ar with passengers weighing about r 27 stones? If so, please give me name. I have tried one, but I it, as it used to stop the engine oon as the clutch was let in. I y a hub plate clutch. I am not al to two-speed gears. (2.) Is e any device on the market except Ariel half compression that could ted to an ordinary engine to y of starting by walking slowly g?—J.E.

is quite impossible for a machine t a reasonably low gear to start nd a loaded sidecar with a clutch. this on a perfectly level or y downhill grade is a comparaeasy matter with a gear of 5½ or , but if the clutch is to be of any nd to be able to restart the engine on a hill of, say, 1 in 8 or 9, at least a 9 to 1 gear is necessary, and this is, of course, impossible unless a two-speed gear is fitted. Some motor cyclists seem to be of the opinion that a clutch is quite as good as a two-speed gear, but this is absolutely impossible. A good clutch is undoubtedly a sound article, and of great utility for solo machines, but it is not and cannot be expected to perform the same functions as a variable speed gear. (2.) We do not know of a decompressor sold separately.



A novel illustration showing the underside of a Chater Lea No. 7 three-speed chain-driven machine, specially intended for sidecar work. This illustration serves to show the arrangement of the magneto, engine, silencer, gear box, transmission, and brakes.

Starting by Handle. Heavy Tyres.

(1.) I have a heavy twin machine (magneto) with free engine pulley, to which I have had fitted a handle to start by hand, in order to avoid the labour of running the machine, and as I intend fitting a sidecar, I am afraid it would be impossible to move the combination quickly enough to make the engine fire, as I am not a Sandow. I, however, find that I cannot make the engine fire when using the handle attachment, as apparently the magneto requires a certain number of revolutions before a spark occurs at the plug, and, of course, I cannot turn the engine quickly enough, owing to the compression. The magneto is all right and makes a good spark at the plugs when I take them out for testing. I read about other machines with handle starting. Do they have accumulator ignition in addition, or should the engine fire with magneto ignition with first turn of handle (or half turn as I see advertised)? (2.) I have a Palmer cord tyre 26 × 2¼ on the back wheel, and should like to fit a voiturette type of tyre. Will you please tell me what size would fit the rim, and whether you consider the rim strong enough to take the tyre?—A.J.C.

(1.) It is a difficult matter to start a motor cycle magneto engine by a handle fitted on to the crankshaft. The only way to do it is to set the sparking plug points as close together as possible, and to be sure and exclude as much air as possible from the carburetter, opening, of course, the extra air shutter as soon as the preliminary explosion has taken place. What usually happens is, either that there is a counter-shaft and the starting handle is on the latter and so geared up to the engine, or the machine has a live axle and the starting handle is on the live axle, and, it is, consequently, geared up to the engine to about 4½ to 1. Very few machines have accumulator ignition as well as a magneto. (2.) You will probably have to procure a fresh rim if you wish to fit a voiturette tyre. The makers of the tyre you select will inform you on this point.

READER'S REPLY.

Softening Rubber Belts.

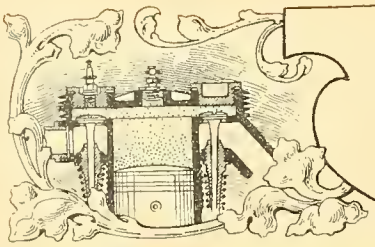
I note that "Anxious," on page 273, asks for a means of softening a rubber belt." If "Anxious" will soak his stiff rubber belt in moderately warm water for half an hour he will find it pliable. He should put it on the machine and give it a run while in this pliable state, and he will find that it will not return to its old hardness.—PERCY S. CROSSLEY.

EXPERIENCES WANTED.

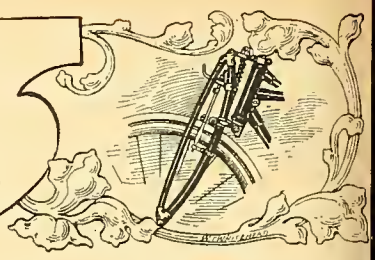
Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"Senex" (Wolverhampton). J.A.P. twin-cylinder engine 85 × 95 mm. What carburetter is most suitable? Will engine start easily on magneto only?

"A.M.C." (Warwickshire) wants a twin-cylinder motor bicycle engine of approximately 20 h.p., and would like addresses of manufacturers making such.



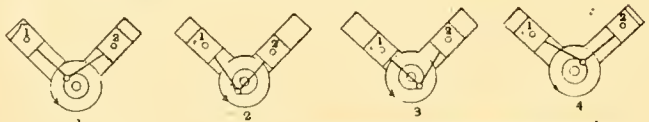
A CRITICISM OF Mr. R. Rüde's Ideal Motor Cycle.



THE article "My Ideal Motor Cycle" which appeared recently has no doubt been of very great interest to many thoughtful riders, and, whilst appreciating the ideal aimed at, I venture to think there are at least one or two points open to criticism.

(1.) The central disc between the two halves of the crank case, whilst theoretically correct, would, I am sure, prove impossible in practice. To make this joint absolutely pressure tight (a necessity in the case of a two-stroke engine) would be difficult in the first place, if freedom of rotation is to be maintained, but to keep this joint tight under working conditions is, in my opinion, impracticable.

(2.) Then Mr. Rüde says that the compression in the crank case is utilised. As shown in the diagram,



Diagrams showing the positions of the pistons at different points in the stroke.

with two cylinders at 90°, the connecting rods of which are both connected to the same crank pin, the compression in the crank case would be useless. The four diagrams shown above will illustrate my meaning.

To commence with, we will assume that the crank case is full of air and the pistons in the position shown in fig. 1. In moving down to position 2, pistons 1 and 2 both move down half a stroke, reducing the space in the crank chamber by one cylinder volume. In this position the inlet port to cylinder 2 is uncovered, and pure air and carburetted air enter in turn. So far so good.

In moving from position 2 to 3, piston 1 comes down another half stroke but piston 2 goes up half a stroke, thus neutralising the pressure in the crank chamber just at the moment when cylinder 1 is ready for its charge of scavenging and carburetted air.

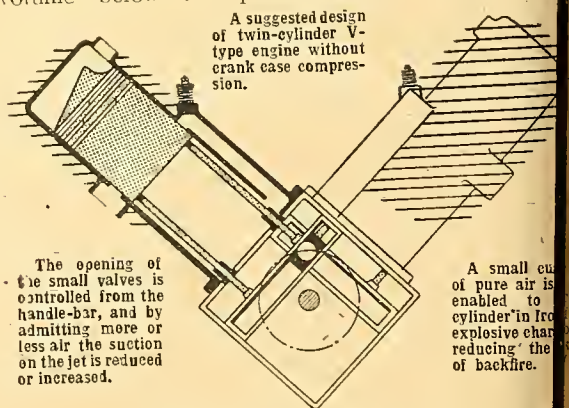
Passing from position 3 to 4, pistons 1 and 2 each rise half a stroke, or equal to one cylinder volume. From position 4 to 1 the volume of mixture in the crank chamber does not vary, because, although piston 2 comes down a half stroke, piston 1 rises half a stroke. To make my meaning clear, cylinder 2 will work and get its charge of pure air and carburetted air in turn, but when cylinder 1 is ready to receive its respective charges the pressure in the crank chamber is normal, *i.e.*, due to the blower and not to the movement of the pistons. It thus follows that, although cylinder 2 would work all right, cylinder 1 would not, or even if it did, by reason of the pressure supplied by the blower, the cylinders would be working under unequal conditions, and cylinder 2 developing considerably more power than the other.

To sum up, my contention is that it is impracticabl to use crank case compression with two cylinders 90° working on the same crank pin. For such com pression even firing will have to be abandoned, or con versely, if even firing is a *sine qua non*—and personall I regard it as such—then the idea of compressing th charge in the crank case must be abandoned.

It may perhaps be a strange coincidence, but I hav contemplated the construction of an engine designe on similar lines to those of Mr. Rüde, but I ha abandoned crank case compression. The difficulti connected with tightness of the joints in the crank cas bearings, etc., and the mixing of an excessive amou of lubricating oil with the carburetted air in the transf port, make it advisable to seek a solution of the p blem in another direction. My suggestion is the desi illustrated below, which in the main is similar to M Rüde's, but omitting crank case compression and t usual type of connecting rods.

Another Suggested Design.

In my suggested design, the small blocks at end connecting rods are made of hardened steel, and sl to and fro in the guides. These guides also slide grooves in the crank case, which is made of steel of a suitable rectangular shape for the purpose. Th being extremely little side thrust on the guides, appreciable wear should take place between the gui and the crank case. A balance weight, equivalent the weight of one piston, its two rods, guide, blo and crank pin would be required. This would perfect balance. No inlet port is shown in the ske nor joints between crank case and cylinder, for sake of clearness, but they are in the usual places. volume below the piston would be approxima



A suggested design of twin-cylinder V-type engine without crank case compression.

The opening of the small valves is controlled from the handle-bar, and by admitting more or less air the suction on the jet is reduced or increased.

A small cu of pure air is enabled to cylinder in fro explosive char reducing the of backfire.

halved, giving a powerful blast when the inlet por uncovered.

There is nothing startling about my suggested d as steam engines have been constructed with arrangement and have worked well, and there

A Criticism of Mr. R. Rude's Ideal Motor Cycle.—

reason why, with adequate lubrication and smooth and accurately finished guides, this system should not work as satisfactorily as the more orthodox practice. The usual connecting rod, by virtue of its angularity in the cylinder, exerts a fairly heavy pressure on the cylinder walls, whereas in my design there is no side thrust beyond the almost negligible weight of the small pistons. Of course, the two cylinders working on the same crank pin must be slightly staggered to allow the guides to work side by side. The two small stuffing boxes through which the piston rods pass are the only parts necessary to keep gastight, which should not be a very difficult matter.

Points of the "Ideal" Engine.

With regard to some of the other parts of Mr. Rüde's engine, I take exception to the blower, as considerable difficulty will arise in gauging the size and speed relative to the crankshaft speed. At low speeds the pressure will be very low, in many instances just when most power is required, and at higher speeds the time available for scavenging is so extremely small, much less than would be the case in a four-stroke engine, that I doubt whether the extra complication would be worth while. I quite agree that a small cushion of pure air, driven into the cylinder before the charge of carburetted air enters, is an advantage, to prevent backfiring and waste of fuel, but I should think that a small automatic valve, opening to the atmosphere just over the inlet port to the cylinder, would give equally satisfactory results.

A Clutch Advisable.

Another improvement I would strongly recommend is a thoroughly efficient multiple disc clutch. This, in conjunction with the exceptionally even torque of such an engine, should prove equal to nearly every emergency, and should enable the machine to climb steep gradients at a slow speed without the complication and weight of a variable gear.

I am particularly hopeful that the two-stroke engine will partly oust the four-stroke engine for ordinary touring purposes, but it will be many years before its speed and power will equal such an engine as, say, the 1911 Tourist Trophy Triumph engine (cubical capacity being the same), at any rate without the addition of several fitments beyond the simple three-port system. Part of the attraction of the two-stroke engine lies in its wonderful simplicity, and the addition of a number of parts would rob it of much of its charm. If the two-stroke engine is to develop, it will have to be strictly along simple lines. To bring it to the efficiency of the highest examples of motor cycle engines at present in existence will necessitate much experiment and observation. J.W.O.

BROOKLANDS OBSERVATIONS.

Surface of the Track.

THE general opinion of riders is that the surface of Brooklands has benefited considerably by its winter overhaul. The bumps on the "ten feet" line are comparatively few and far between. Newcomers to track racing would be well advised not to take one hand off their handle-bars for oiling purposes either by the tunnel under the track past the members' bridge or just past the aeroplane sheds—at any rate when they are travelling at 60 m.p.h. or over.

Steering Difficulty Disappearing.

Considerably less difficulty seems to be experienced from the "Brooklands wobble" this season. Spring forks are in increasing favour, as are knee-grip pads on the tank and very wide dropped bars, wrapped with insulating tape to give the hands a firmer grip. The Triumph cracks are now using the stronger springs in their forks instead of the felt pads previously in vogue, which threw a severe strain on the buttress. Burridge's Rudge, which performed so well in the first T.T. hour race, had the standard Rudge spring forks, and steered better than Burney's sister mount in which a pair of rigid forks were tried experimentally.

Durable Exhaust Valves.

Rumour has it that the Triumph Co. has discovered a new material for its exhaust valves which will stand a mile a minute gait until further orders. Haswell was using one of these when he finished second in the first T.T. hour race, and it had not stretched in the least at the finish. Over fifty-four miles in the hour in touring trim, in spite of a slipping belt for the first few laps, was a wonderful performance for anyone who had never ridden a T.T. mount on the track before the previous afternoon.

Mistakes in Tuning.

A mistake some people make when tuning up a 3½ h.p. single for Brooklands is to go to extremes. They try a terrific compression, a big jet and choke tube, and a very high gear, which result in the engine "petering out" after a lap or two, when it comes to tackling the rise by the pond against the wind.

An Ideal Testing Ground.

W. F. Newsome has had over a fortnight at Brooklands testing chiefly the new pattern Triumph valve. It is said to be the best yet. He was joined early last week by G. E. Stanley, who indulged in a few days' practising before making an attempt to capture the much coveted hour record on his Singer.

Laps at 65 m.p.h.

The two fastest machines at present among the senior and junior T.T. aspirants seem to be those ridden by those veteran experts, C. R. Collier and Harry Martin, both of whom had several stops in the first T.T. hour races. Charlie Collier was doing laps at close on 65 m.p.h. with his stand trailing.

Auxiliary Exhaust Release.

Auxiliary exhaust ports are very popular at present for track work. Their value for short races is rather problematical, however, as they require a very different carburetter and valve timing adjustment, which has to be found by experiment. A bigger jet is necessary, as an appreciable amount of mixture is blown out on the compression stroke—not to mention quite a "little oil bath" for the rider's legs and the belt. We have noticed several engines with their ports drilled too low down so that they are not entirely uncovered by the piston on its downward stroke. On the other hand, especially when a short piston is used, cold air is sucked into the crank case on the up stroke.

Experience with a Calthorpe.

C. W. Barker, of Parkstone, Dorset, writes that he has ridden considerably over 3,000 miles on a Calthorpe motor bicycle, and it is still running as well as on the first day. During the period mentioned he has not experienced the least trouble with it.

Satisfied Brooklands Competitors.

Several Brooklands competitors have written to the Hutchinson Tyre Company stating how pleased they are with the tyres fitted to their racing machines. Among those who have been particularly well satisfied are Cyril Patterson, F. W. Barnes, and C. R. Collier.

A Satisfied Owner.

Mr. W. Bannister, the maker of the "Unecar," 62, King Street, Maidstone, informs us that one of his customers, a well-known Belfast doctor, has written stating that he has been the owner of three different makes of motor cars in the past ten years, and at present has an up-to-date modern car, but he enjoys driving the "Unecar" as much as, or more than, any other vehicle he has handled. He has driven it a good deal in all weathers, both in town and country, and he is quite satisfied with its running.

Address Wanted.

Messrs. Godfrey and Nash, The Elms Motor Works, Golders Green Road, Hendon, N.W., inform us that they have recently received an enquiry for a G.N. runabout from Mr. H. R. Horton, whose letter contained no address. Should this catch the eye of the reader in question, Messrs. Godfrey and Nash will be glad to hear from him. The firm has received enquiries concerning the G.N. from all parts of the globe.

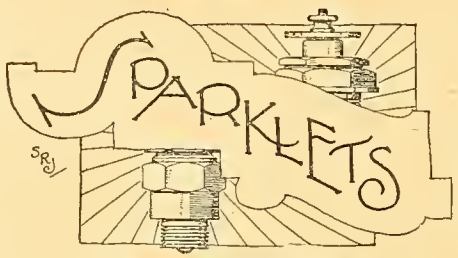
T.T. Silencer Regulations.

One day last week we had the pleasure of inspecting one of the T.T. Rudge-Whitworth models which has been altered as regards the silencer pipe to comply with this year's regulations. The standard silencer has been left intact to act as an expansion chamber, and from the right-hand end where the cut-out is usually fitted a 1½in. pipe is carried in a slightly upward direction, terminating beyond the rear axle and about level with the back of the tyre.

John Gibson and H.H. Bowen are the two most recent riders to be won over by the capabilities of the new Rudge, and are expected to bestride machines of this make at the Brooklands meeting on Easter Monday, whilst A. L. Ommaney has recently joined the R.-W. testing staff.

Shamrock Belts and Tyres.

A recent visit to the Hanover Rubber Co., 29-31, Old Street, E.C., elicited the fact that the company was exceedingly busy in supplying Shamrock-Gloria belts. It is small wonder that the latter are in big demand, as they were fitted to several of the winning machines at the last two Brooklands meetings. Mr. Sudfeldt, the company's manager, who is himself a keen rider of a 3½ h.p. Triumph, told us that 2¼in. rubber bar and steel-studded combination S.G. tyres were much in demand owing to the increasing use of 3½ h.p. machines in conjunction with a sidecar.



Sectional Road Maps.

A good road map is required by every motor cyclist who undertakes extended tours. Many readers already know *The Autocar* map, which finds a place on the walls of most important hotels and garages throughout the country. An equally good sectional road map of England and Wales has also been prepared, and is now ready for sale. Although it is rather too bulky for a motor cyclist to carry the whole of the twenty-four separate sections, it is an easy matter for him to select two or three of the sections embracing the particular district in which he contemplates touring, keeping the others at home for reference. Each section is printed on substantial cardboard, the scale being eight miles to the inch, and a key map is provided on the back of each section. The series can be obtained packed in a stout waterproof envelope, price 4s. 10d., or in a cloth case 6s. 4d., post paid, from *The Motor Cycle* Offices, 20, Tudor Street, E.C.

A Motor Cyclist's Waterproof Suit.

The accompanying illustration shows the latest form of Burberry motor cyclist's suit (Burberry's, Haymarket, W.) The coat is made of heavy gabardine and is lined with fleece. It will be noticed also that there is a heavy storm flap which effectually prevents rain from driving into the inside of the coat. We can speak from experience of the comfort of one of these coats. The leggings, it will be noticed, are particularly neat, and strap neatly round the calves of the legs.

Burberry motor cyclist's suit.

Motor Trips at a Glance.

We have received a copy of a new and enlarged edition of "Motor Trips at a Glance," which is edited by Mr. A. J. Wilson and published for the Dunlop Pneumatic Tyre Co., Ltd., by A. J. Wilson and Co., Ltd., 154, Clerkenwell Road, E.C. The object of the book is to provide ready-made routes, such as would require working out with the aid of maps and route books. The particulars of each trip are printed on a separate page, accompanied with a map on the opposite page showing the distances between towns. There are in addition 300 pictures of roadside curiosities arranged in alphabetical order. The price of the book is 2s. 6d., and it is recommended by the Touring Department of the R.A.C. and the A.A. and M.U.

Spares for V.S. Machines.

Owners of machines fitted with the V.S. two-speed gear will be interested to learn that Messrs. H. Collier and Sons, Ltd., Plumstead, S.E., have purchased the entire London stock of the V.S. Co.

Spare parts for Peugeot engines fitted to V.S. motor cycles can be obtained from Mr. J. Taylor, 318, Percy Road, Birmingham, the V.S. Co. having given up their retail depot in Great Portland Street.

Catalogues Received.

The book of the Royal Enfield lightweight motor bicycles is an interesting publication, and contains in addition to illustrations and particulars of the belt-driven machine some excellent sectional views of the engine, two-speed gear, friction clutch, and other devices used in the construction of the more recent two-speed chain-driven lightweight. Copies can be obtained on application to the Enfield Cycle Co., Ltd., Redditch.

Messrs. Alfred Dunhill's special motor cyclists' catalogue has just been published. As may be expected, every article which the motor cycle rider needs is priced and listed. Among the clothing may be mentioned a dustproof summer suit, which should be heartily welcome as soon as the summer is with us. A speciality is also made of waterproof suitings, which have been lately described in *The Motor Cycle*. Messrs. Dunhill have also introduced a sidecar of their own, which is sold at a very moderate price.

Maude's Motor Mart, Powell Street, Halifax, have sent us their 1911 list of accessories. This contains illustrations and descriptions of most of the well-known accessories. Copies can be obtained on application to the above address.

The name of Brooks has been known since the earliest days of motor cycling as makers of the highest-class saddles, toolbags, etc. In a review of the Brooks book (motor cyclists' edition) it would, therefore, be superfluous to point out an article more deserving of attention than another. All Brooks's wares are good. At this season of the year, when motor cyclists are contemplating the equipment of a new machine or additions to an old one, a copy of the above will be of considerable interest. It can be obtained post free on application to J. B. Brooks and Co., Ltd., Criterion Works, Birmingham.

THE MOTOR CYCLE

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

Errors in Issuing Results.

ONCE again it is our lot to chronicle the fact that errors have been made in announcing the results of an important competition, and such being the case we would throw out a few hints to those clubs which have arranged their first open competition for this year. The Oxford Motor Cycling Club carried out the first open competition of 1911 Kop Hill most successfully, but by some unfortunate mischance gross errors were made in proclaiming the results. It must be understood that these remarks cast no reflection upon any official in particular—in fact, we do not know who the delinquents really are—but the results of two classes were affected by copying the supposed winner's weight wrongly from the clerk of the scale's book, and other little slips occurred of a minor order. Consequently, after the positions had been announced and published they had to be cancelled and fresh results issued in two of the classes—truly a most unfortunate state of affairs. One must not, however, speak too unkindly, for mistakes are bound to occur occasionally, and it seems somewhat ungrateful to reprimand or suggest carelessness on the part of enthusiastic honorary officials, who give up many hours of spare time working hard for their clubs. It is a thankless task, we admit, but that does not get us any further away from the errors, which to some competitors concerned mean very great inconvenience. From fixture lists which continue to reach us we notice that several clubs new to the game are launching out with an open event, and we would urge them to take the most adequate precautions to guard against errors of the nature referred to. Every figure should be doubly checked, including the weights, times, and formula calculations, and, above all, no results should be issued hurriedly. This is where many of the errors have occurred in endeavouring to get out the figures in record time.

Experienced officials should be engaged, who, above all, should withhold any announcement until the figures are above suspicion. Everybody, we think, would be satisfied to get the competitors' times the same evening (which are quickly calculated) and the formula results a day or so later, with the knowledge that they are not likely to be rescinded.

Motor Cycle Engineering.

WE have pointed out in these pages that motor cycle designers have learnt a good deal from motor car practice, and doubtless could learn more; also that no car designer will deny that he has not gained useful knowledge from a study of the best motor cycle engines. That being the case, we commend the attention of our mechanically minded readers to an excellent article in the current issue of our contemporary, *The Automobile Engineer*, in which a study is made of the present state of motor cycle engineering, and what it has learnt from and taught the car designer.

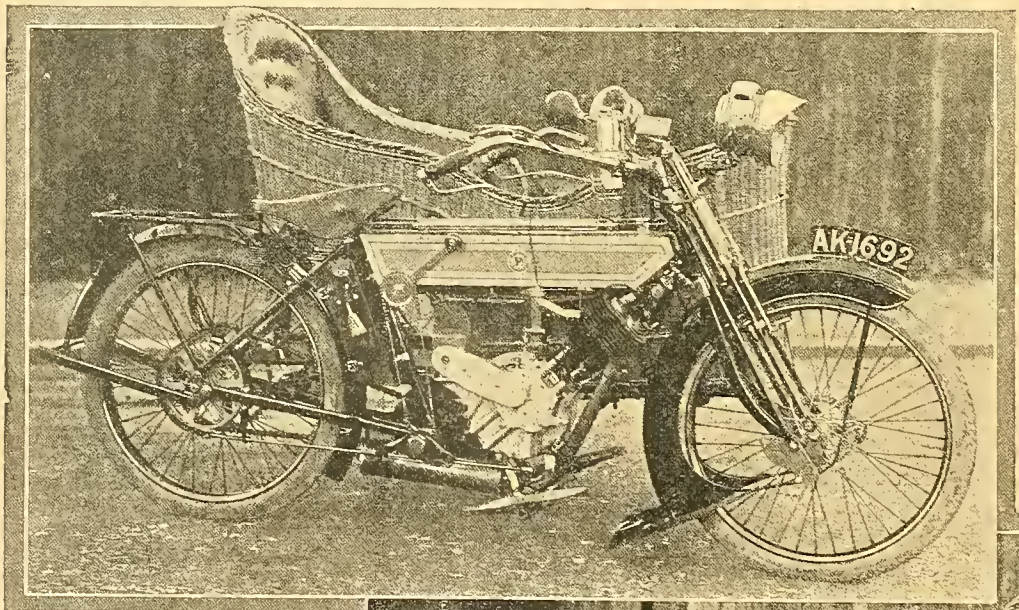
Space prevents us quoting any of the passages, which would, we feel sure, be read with interest, but we think it will be appreciated if we briefly summarise the principal points which *The Automobile Engineer* contributor thinks motor cycle designers should investigate. They are silence, lubrication, carburation, and improvement of the epicyclic form of gearing. All these items are for various reasons better provided for on cars, and it rests with the motor cycle designer to see if he can make each one better without robbing the motor cycle of its chief charm—simplicity

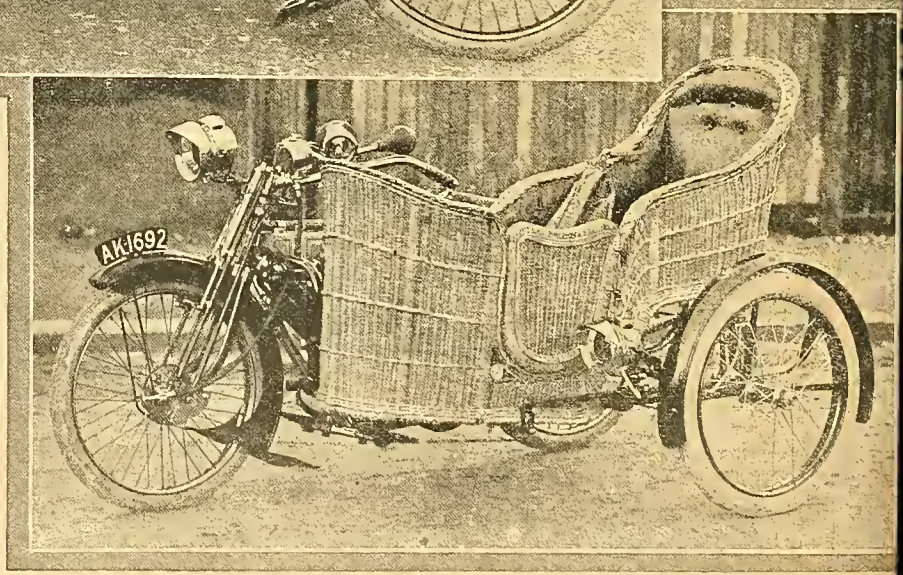
A LUXURIOUS SIDECAR COMBINATION

IN our issue of March 9th we mentioned the splendid performance of a 1911 P. and M. and sidecar which, with three up—total weight 34 stones—climbed Fitzjohn's Avenue and afterwards Netherhall Gardens (1 in 7.5), with sidecar and one passenger, from a standing start. This experience induced us to submit the combination to a more extended trial. Starting from Tudor Street, the first stage of our journey through Barnet, on to St. Albans and the by-roads of Hertfordshire beyond, enabled us to test its ease of control in traffic, its "picking up" qualities, and its power "all out" on level roads. We found the machine in the highest degree satisfactory in every particular.

Later, a run through Markyate and Kensworth, over the Dunstable Downs, along the Icknield Way to Tring, thence to Wendover and Princes Risborough and back to St. Albans, gave us roads of varying character and many gradients. The P. and M. responded to every demand and left us free to enjoy the beautiful scenery *en route*. It is indeed a "go anywhere" machine, if one may be permitted this much-abused term. The time at our disposal did not admit of a te up Kop Hill, but we fancy this would possess terrors for the redoubtable P. and M. The route traversed is not lacking in stiff gradients, and is sufficient test of the capabilities of any machine. T P. and M. has been fully described in previous issue and we illustrate the combination mainly to c attention to the unusual design of the Mills-Fulfo rigid sidecar. As will be seen, this is built to speci order, in close-woven cane. A child's reversible a removable seat is provided, and the fore part made unusually hi to afford protecti to the second pa senger. The sid car is remarkab well sprung comfortable lon shackled C spring and is exceptional luxurious.

Altogether, t combination is o which should a peal very strong to the "fami man," and may relied upon to gi complete satisfa tion.



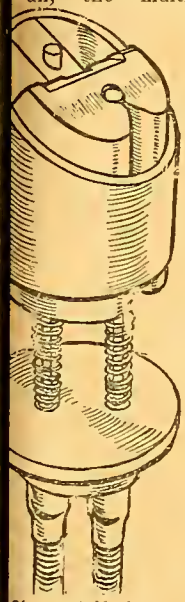


Left and right sides of a luxuriously appointed two-speed P. and M. and Mills-Fulford sidecar.

PROGRESS IN THE MIDLANDS.

n Improved Amac Carburetter.

HE latest production of the Aston Motor Accessories Co. is a new lightweight carburetter which contains several special features. First all, the multiple jet principle, which has proved itself so successful in several recent competitions is retained. In this arrangement there is one original petrol jet, immediately over which are three jets through which the petrol, together with a small quantity of induced air, passes, thereby rendering the initial rich mixture a most intimate one. Above these three jets, which are in a line across the mixing chamber, come the throttle and air valves, which are of quite novel design, and are shown, upside down, in fig. 1, in which it will seen that the air valve slides de the throttle valve, both being actu- in the usual way by means of Bowden s and internal springs. It will be ced that the apex of the air slide is mfered off. This is done so that even n the air valve is fully closed a cer-



Shown upside down.

g. 1. Throttle and air es of the new Amac uretter.

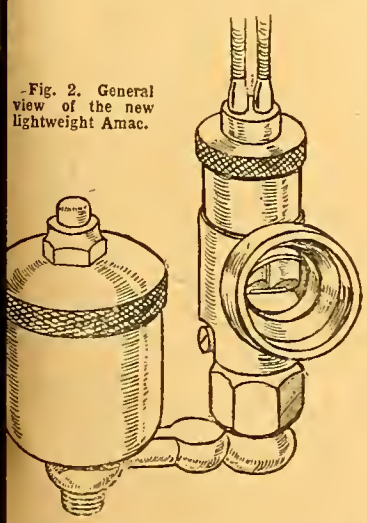


Fig. 2. General view of the new lightweight Amac.

amount of air can get past over the . It will be realised that the func- of this air valve is, in addition to of regulating the admission of air, that of furnishing a variable choke e effect, as the choke tube is repre- ted by the space between the jets and base of the air slide. Owing to this arrangement the carburetter is particularly good in starting and slow running, and we understand that its general behaviour under tests have shown it to be exceedingly efficient and thoroughly economical. Certainly it leaves little to be desired in point of neatness of design. It most readily takes to pieces, and all parts are therefore easily accessible, especially the jets, for which purpose a special inspection screw is provided. Fig. 2 shows the appearance of the complete carburetter.

L.M.C. Refinements.

Quite one of the cleverest ideas for scavenging the exhaust gases out of the cylinder before the inlet charge is allowed to enter is that which has recently been fitted to a few L.M.C. competition machines. This device, of which a view is given in the sketch fig. 3, takes the place of the usual cap over the exhaust valve, and consists of a dome containing a valve operated by an overhead rocker, which in turn is worked by a small cam mounted on one of the pinions by which the magneto is driven. The pipe issuing from the additional valve chamber is led to the upper part of the crank case, and the valve is so timed that it opens during the moment between the closing of the main exhaust valve and the opening of the inlet valve. At this point the upward stroke of the piston has created a partial vacuum in the crank chamber, and hence when the additional valve opens the exhaust gases left in the cylinder are drawn therefrom into the crank case, whilst, in addition, the partial vacuum so formed in the com-

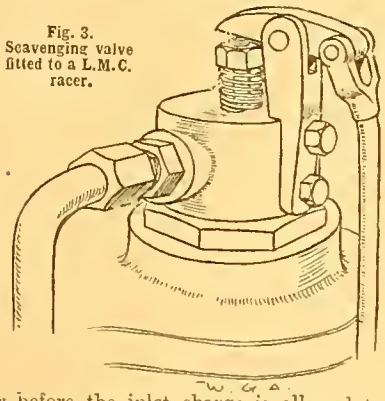


Fig. 3. Scavenging valve fitted to a L.M.C. racer.

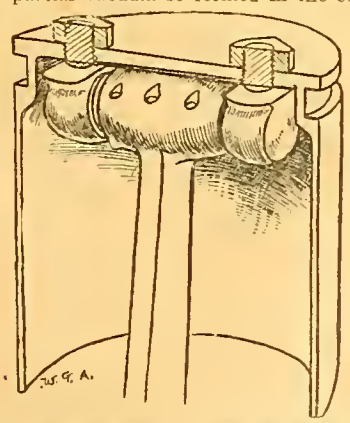


Fig. 4. Light racing piston with patent gudgeon pin fixing

bustion head helps the ingress of the fresh charge of gas. In this way extra efficiency is obtained, first by the fact that the charge of mixture is undiluted, and secondly by the fact that more of it is allowed to enter. On the outside of the crank chamber is a small leather-faced non-return valve, through which the gases drawn into the crank chamber are ejected by the down coming piston.

Evidently the L.M. Co. are out to add to their Oxford M.C.C. success if one may judge from the fact that Mr. Lloyd has recently produced an exceedingly light form of piston, which we illustrate in fig. 4. It should be noted, however, that this type of piston is not sufficiently strong to warrant its use for sidecar work, and it is therefore wisely not supplied to the public except on the T.T. model. The piston, it will be observed, has only one ring, and by virtue of the patented attachment of the gudgeon pin, can be made of extreme lightness, even though of cast iron. The gudgeon pin is solid with its carrying lug at one end, whilst at the other the lug is driven on to it, the two lugs being secured to the piston head with simple bolts as shown. Theoretically, at any rate, the idea of the nuts on the piston head is not to be commended, but actually, we are informed, no trouble whatever has been met with in their use. Certainly the piston is very light and neat, and it should enable the engine to reach a considerably higher effective speed than with a piston of the ordinary form.

An Ingenious Accessory.

The Sphinx Manufacturing Co., of Bradford Street, Birmingham, have just introduced a most ingenious little accessory which, inasmuch as it fulfils a felt want, is cheap and takes up practically

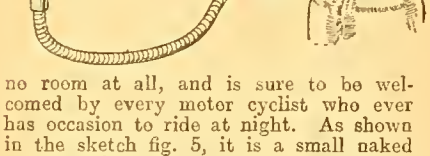


Fig. 5. The Sphinx Flex-Jet.

no room at all, and is sure to be welcomed by every motor cyclist who ever has occasion to ride at night. As shown in the sketch fig. 5, it is a small naked acetylene burner designed to be attached to the generator for the purpose of illuminating at night such operations as puncture mending, belt adjustments, repairs, etc., etc. The end of the flexible tube, remote from the burner, carries a neat little adapter which is simply pushed on to the generator nipple, and by means of which the whole affair supports itself. The chief beauty of the device, however, is that the flexible tube can be bent so as to put the burner in any position, and when so bent it remains firm. This is accomplished in an ingenious manner by inserting a core of soft iron wire inside the flexible tubing. The latter is some ten inches long, and wherever the generator is fixed the jet can be arranged to throw a good light on either one or other of the sides of the machine. The flexible tube can be used as the ordinary tube between the generator and the head lamp. It is called the Sphinx Flex-Jet, and costs only a few pence.

Occasional Comment

By Ixion

Hub Lubricants.

The motor cyclist is apt to glance disdainfully at the youth he sees travelling along head down, clad in tight jersey and thin stockings, on a dropped bar push-bicycle; yet that same youth could give the average motor cyclist points when it comes to the care of ball bearings. How many of my readers ignore their hubs, steering head, free-wheel, and bottom bracket bearings? Even manufacturers are not guiltless in this respect. I have heard of several machines being delivered this year without even a faint sticky smear in the wheel hubs and steering head. But if these parts require attention, oiling, and adjustment on a comparatively slow featherweight push-bicycle, much more do they require it on a fast heavy motor cycle.

Furthermore, an occasional squirt from a gun filled with any old oil, varying from cycle lamp oil to castor oil or even salad oil, is of little use. A highly specialised lubricant is required, and may be obtained from any conscientious dealer. The lubricant must resist the inroads of water (the ball-bearing's deadliest foe), dust, and mud. It must have sufficient body, so that it will lubricate as well at the end of a long speed run as at the beginning. It must be so thick that it will not leak out in hot weather, so liquid that it will not gum up the parts in winter.

In every big trial a number of machines finish with the bearings of their hubs and heads practically ruined from sheer callous inattention. The wise rider will procure a tin of a special lubricant, and immediately on receiving his machine will ascertain that the hubs and head are well packed with it. The stuff resembles vaseline or other light greases in appearance, but may readily be thinned down by heating, and can be more easily injected if the lubricator caps are taken right out. It is further well suited for such parts as two-speed gears and spring fork bearings, while a good many riders employ it for the magneto chain.

Not every rider is aware that the magneto chain often approaches a speed of 1,000ft. per minute, which is perilously near the speed limit set by chainmakers. At any rate we know our magneto chains not infrequently demand adjustment, or even replacement; and considering that they run in dustproof cases, it is evident the strains on them are heavy, and should be eased by careful lubrication.

Two Yarns—Each with a Moral.

Jones, being young and headstrong, never realised that his new machine would require number-plates until he saw its plating gleaming through the interstices of its crate. Unluckily he resided eight miles from a garage. He uncrated it and rode off to the county town to register it and get the plates. *En route* he fell foul of the police for riding an unregistered machine.

On arriving at Puddleopolis he spent a fidgety afternoon waiting while the puncture repair boy—the only hand disengaged—roughed out a pair of rather uncouth plates. Most of the evening was devoted to mending the punctures caused by the aforesaid boy when he let the breast-drill go right through the front mudguard into the tyre.

Smith was wiser in his generation—he registered his machine when he placed his order, and sent the letters and numbers up to the factory. His machine arrived with painted plates already *in situ;* but the firm of his choice being of the get-rich-quick type the metal of the plates was paper-thin, and they were attached by weeny little nuts and bolts, which fell off on the first ride. Smith returned from this ride with his number-plates jinglingly attached by string, the gleaming enamel of both mudguards much abraded, and his temper in a condition aptly described by Mrs. Smith as "raggy at the edges."

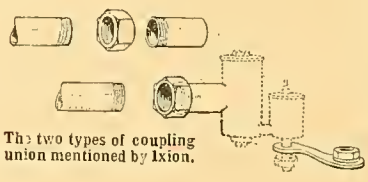
The up-to-date maker sends a request for the registration numbers with his acceptance of the order and affixes it in the form of shapely varnished transfers to plates which are vibration and burglar proof!

Opinions Wanted.

I see, to my surprise, that certain firms continue their allegiance to a form of union which my early experience led me to denounce as anathema many years ago. It is generally situate somewhere on the inlet pipe, most frequently serving to couple the inlet pipe to the carburetter delivery pipe, and consists of two pipes with screw-threaded ends both screwing into a large coupling nut.

The particular demon that haunts such joints takes the following form: to get the affair tight you have simultaneously to insert the first thread of each pipe dead true in one and the same nut—the threads are usually of the ultra-fine and numerous order—the situation is further complicated by the fact that each pipe is locked at its other end by other fastenings and the whole thing is seldom quite true, so that there is grave danger of cross-threading. If you make the tiniest error it may result in your being absolutely unable to replace your carburetter. With cold hands the job is indescribably awkward. Am I an almighty juggins, or am I right in considering this joint as an invention of the evil one, which ought to have been relegated to the limbo of defunct abominations a century ago?

The alternative, of course, is to fit one pipe end with a flange, the other with a thread. Then one end of the nut is flanged, and the other threaded, and you have only one pair of threads to register. The reason why some makers stick to the more complex union is that the flange will not carry as much weight or sustain as great a strain as a double-threaded union, so that a separate bracket is required to support the part which is hung on the flange. I notice that the best British makers prefer the flange and bracket plan, and I am sure they are right.

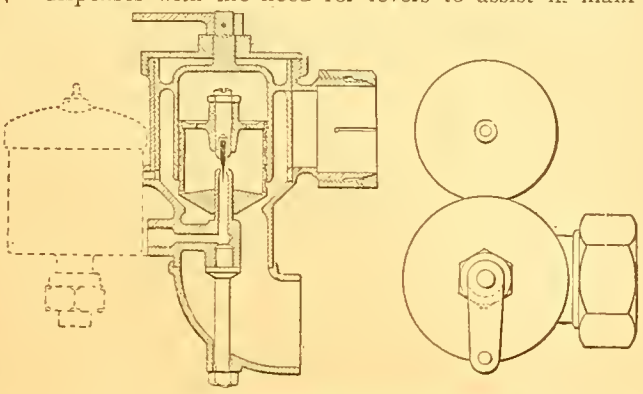


The two types of coupling union mentioned by Ixion.

A NEW SCOTT-ROBINSON CARBURETTER.

T is now over four months since we described in detail the Scott-Robinson automatic carburetter, besides publishing a line section and a half-tone ustration of it. Consequently the "first illustrated escription" of exactly the same model which ppeared elsewhere a week or two ago was, to say e least, somewhat belated. The carburetter has tely been considerably modified in design by the bstitution of a new form of throttle, the lever of nich works in a horizontal plane, and it com- etely alters the external appearance. The interior atures remain the same, and we may recapitulate s most novel points.

All air enters *viâ* the pipe at the base, and the olume is varied according to the suction of the gine raising or lowering the hollow air regulating at, which latter has a row of petrol orifices around cone-shaped base. By the same movement of this at, which, as will be seen, slides in an inverted shpot or guide, a tapered needle is raised or wered into the jet orifice, thereby passing more or ss petrol, according to the degree of suction. The edle is suspended in a screw-threaded carrier, and may be adjusted by means of a lock-nut. The float needle is of the inverted cone type, which pattern dispenses with the need for levers to assist in maintaining a constant level. It will be noticed that there is a total absence of spring-controlled valves in this small and compact automatic carburetter.



The new pattern Scott-Robinson automatic carburetter.

THE LADY MOTOR CYCLIST.

A PREFERENCE FOR THE LIGHTWEIGHT.

WONDER if anyone on expressing a desire to take up a new kind of sport was ever teased quite as much as I was when I suggested riding a motor cycle. Oh the drawbacks that were invented! Here e a few of them.

In the first place I was not nearly robust enough, d if I took up motor cycling I should be sure to do yself some very serious injury; my friends even went far as to ask the family doctor to advise me, which did, only to state that the choice of a properly nstructed lady's lightweight motor cycle would do harm whatever; on the contrary, he considered it a ost excellent sport and a splendid way of enjoying the sh air without undue fatigue.

I may say I am one of that unfortunate type of girl nich has to depend almost entirely on its own pabilities, so if I really rode a motor cycle, I knew must be one I could manage without assistance.

Well, to cut a long story short—for I am sure it ll not interest anyone to hear of the jokes that were ade by kind boy friends running after their motor cycles down the road for all they were worth—they ld me that a very much exaggerated leap into the ddle was absolutely necessary to start a motor cycle, t hurrah! I have shown them since that they are quite rong. Another thing was my garb or outfit. It was tually said I should have to clothe myself from head foot in a mackintosh, no matter what the weather was e or where I was going. Once again I scored—I have own them how a lady manages those things on a motor cle that is designed for a lady. I simply closed my rs to all this nonsense, for nonsense it is. I went to the matter carefully, and decided on a lightweight. The machine came home looking so dainty and clean at I was absolutely in a whirl of excitement to try it. ow very simple the learning part is to be sure! I was erely taught the use of the levers which, of course, e on the handle-bars, shown how to turn on the trol, and the rest was very simple—in fact the starting is quite as easy as any ordinary push-cycle.

I then went for a short five mile run with a friend, and after that I felt quite as much at home as I did after mastering the first difficulties of ordinary cycling. Next day I used my motor to go to a tennis tournament ten miles out and arrived there quite fresh, feeling I had made the most wonderful discovery—that motor cycling was far more suitable for ladies than any other mode of transit that I had hitherto experienced.

A Suitable Costume.

I wore a light-grey walking costume, which I quite expected to see spotted with oil and grease, but no, not one spot could I see, and since I have often, if only going for a short run to tennis clubs, etc., worn a white dress and got no more soiled than if I had walked. In fact, I treat my machine exactly as I did my old bicycle, only the motor cycle does all the work, not I. I can lift it quite easily up or down the steps into our garden—you cannot imagine what this means till you have tried to do this with one of the weighty class of machine—and it takes up so little room.

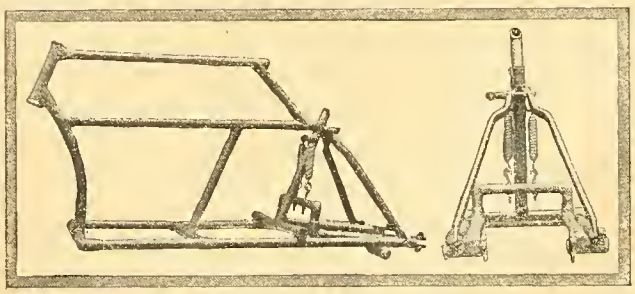
I live one and a half miles out of the town, so you may guess how very convenient it is to do one's shopping on. I can travel at about thirty miles an hour, which I am sure is as fast as any woman would wish to go who uses her machine for pure enjoyment and pleasure. Really I do not think anyone can appreciate some of the lovely days of winter and summer quite as much as on a motor cycle, for it must be remembered that there is absolutely no fatigue, and who can enjoy the most beautiful scenery if tired out?

With regard to heavyweights, my unprejudiced opinion is that they are unsuitable for the weaker sex (for I am still old-fashioned enough to consider myself as such).

Then as regards traffic a lightweight will run so slowly and is so easily managed that it is safe to ride in the thickest traffic. I do hope these few remarks will prove helpful to prospective lady motor cyclists in choosing a motor cycle. WENDY WINTERS.

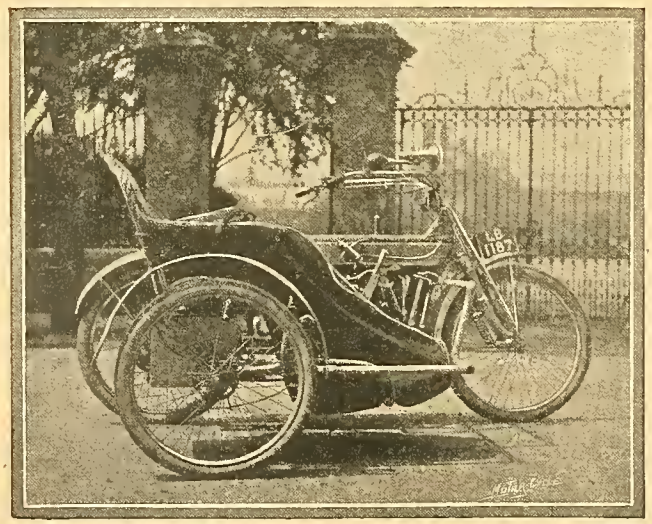
A THREE-SPEED WATER-COOLED SIDECAR MACHINE.

MR. E. A. CROWSLEY, the inventor of the spring-wheeled sidecar which has become so popular of late years, is responsible for the design of the water-cooled motor bicycle and sidecar shown in the accompanying illustrations. The engine



The springing system of the Crowsley motor bicycle, which is specially strengthened for sidecar work.

is a 4½ h.p. single-cylinder and is fitted with the Chater Lea three-speed gear. It will be noticed on referring to the lower illustration that the sidecar is on the off-side of the machine and provided with a band brake. Mr. Crowsley prefers water cooling, but has found by experiment that it is most necessary in the case of thermo-syphon circulation to have the water outlet pipe from the cylinder of very large dimensions. The first illustration shows how ingenuity has been directed towards perfecting the springing of the motor bicycle. It will be noticed that the rear wheel is carried in a separate framework, pivoted about its centre and suspended on two spiral springs. The machine which he is engaged in constructing at the present moment will be similar to the sidecar machine just described, only an air-cooled engine will be used at first.



Crowsley sidecar. The engine is water-cooled and drives through a three-speed gear.

We have had one of the Crowsley spring-wheel sidecars under observation for some time, which is in the hands of a well-known West End practitioner. The sidecar is most comfortable, and its owner assures us that he would not go back to the fixed wheel type.

THE MOTOR CYCLE IN CEYLON.

A COMMUNICATION in the issue of the 19th January on motor cycling in Ceylon, written by "U 32," in which he makes special mention of the merits of the 3½ h.p. Triumph, prompts me to say a few words about the 3½ h.p. Bradbury, although it should be understood that I agree with "U 32" in all he says about the Triumph machine.

The Bradbury machine is in every way most suited to this country, where ease of control, slow running, engine flexibility, sound hill-climbing capabilities, and freedom from trouble are most essential. To these may also be added a turn of speed which is always acceptable. All these qualities I have discovered in a 1910 3½ h.p. Bradbury, which I had the opportunity of taking up to Kandy and back one week-end, a distance of 150 odd miles. Kandy stands about 1,800ft. above Colombo, and the road for the first thirty miles or so passes through flat country, covered in places with thick jungle. Native villages are encountered every few miles, necessitating great care in driving, otherwise one is liable to bump up against sundry stray black infants, pariah dogs, and wandering bulls, with rather uncomfortable results.

The road after leaving Kegalli—fifty miles from Colombo—becomes far more hilly, and one has to wind up long, twisty hills and down again the other side. This sort of thing continues until the foot of the Kaduganuawa Pass is reached—fifteen miles from Kandy. Here the worst hill throughout the whole run is encountered, about six miles long—the road winds in and out all the way, with two very nasty hairpin bends. From the top of the pass there is a slightly downhill run of eight miles into Kandy along a winding road which generally abounds in traffic of every description, finishing up with a steep hill leading to the Queen's Hotel.

The whole journey only took me four hours, which included four stops—one to shorten the belt and the other three to change faulty plugs, as I made the mistake of starting out with a plug which had been 3,000 odd miles in the cylinder and a very doubtful spare. The return journey was accomplished in three hours. I first fitted a new Bosch plug obtained from the garage, leaving Kandy at 4 a.m. on Monday morning and arriving back at the bungalow a few minutes after seven. Throughout the first half of the return journey—by far the worst half—I had to use my Lucas head light, for which, by the by, I have nothing but praise; after this the last thirty-two miles were reeled off from 6 to 7 o'clock.

Motor cyclists in Ceylon are gradually increasing in numbers, and we hope within the next few months to form a motor cycle club, as preliminary soundings have proved very encouraging. The Triumph machine is most popular; the Bradbury referred to in this article is, I believe, the only model of its kind in the island. The 2¾ h.p. Douglas has an ardent admirer in an up-country planter, who possesses the only model to my knowledge out here, and is very satisfied with it. There is also a two-stroke Scott up country, but as yet I have heard no news as to its behaviour. I have seen one or two chain-driven Phelon and Moores passing through Colombo. Although in Ceylon single-cylinders outnumber twins 50 to 1, the latter appeal to me, but this is, I suppose, a matter of choice. A.T.G.G.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

How to Measure the Gear Ratio.

(1.) How can I find the gear ratio with a 28in. road wheel, 4¼in. engine pulley, and 20in. belt rim? (2.) Is this a correct gear for a 2 h.p. machine with a 9 stone rider in a fairly hilly district?—D.A.P.

) Put on the belt, mark both pulleys, ise the exhaust valve, turn the back heel, and count how many times the gine pulley revolves to one revolution the rear wheel. (2.) The gear you ould have should be about 5½ or 6 to 1.

Contact Breaker Trouble.

My machine is fitted with accumulator ignition and plain coil with switch on handle-bar, the contact breaker being of the make and break description. My trouble is that the platinum points continually soot up, with the consequence that the firing of the engine becomes irregular and occasionally ceases altogether. How can I cure it?—C.G.K.

e trouble may be due to (1) oil on the ntact breaker, (2) probably to the fact at the condenser of the coil is not rking properly, and (3) possibly to the ints being of spurious metal. Try dinm.

Starting with Cold Engine.

I have just purchased a 1½ h.p. Wolf lightweight motor cycle, 1909 make, and I have great difficulty in starting when the engine is cold. Can you tell me how his can be remedied? I have also had trouble with the belt, the fastener pulling through. In your issue of March 16th, page 262, there is an illustration of an N.S.U. lightweight, and the writer says he uses a Whittle belt. What is a Whittle belt, and where would I be able to purchase one?—F.M.

start comfortably with the engine cold u should first of all inject paraffin to e the piston rings, and then make sure exclude the air as much as possible m the carburetter. You should also be eful to advance the spark and flood e carburetter before starting. With gard to the belt fastener pulling ough, there is no certain cure for this, ecially if you find you have to have belt very tight. The only thing to do ll be to fit a set of new pulleys and e a Whittle belt, as suggested in your ter. This belt is composed of leather- ed links, and is sold by Messrs. os. Whittle and Sons, Rose and Crown reet, Warrington.

Irregular Firing.

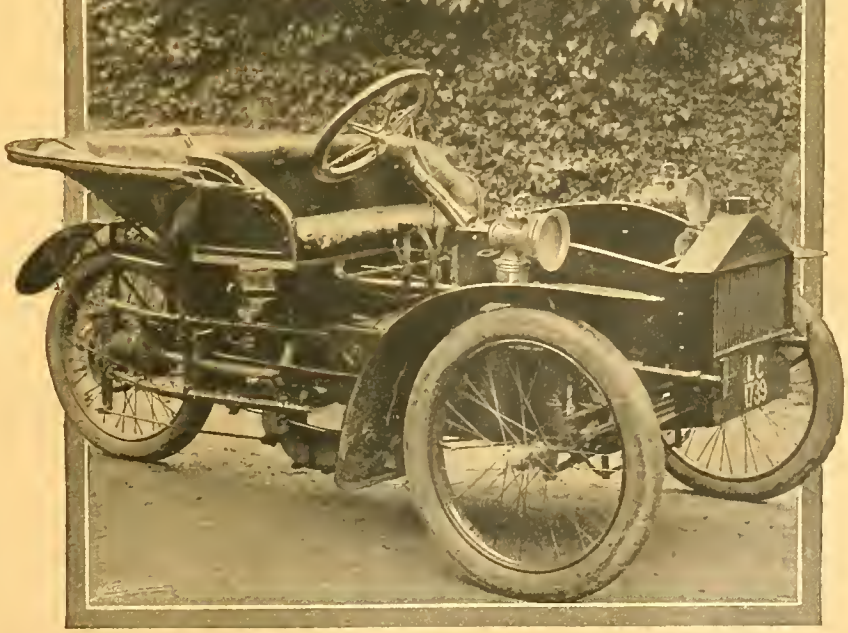
Can you help me with the following trouble: My machine is a 5-6 h.p. Peugeot, ignition by accumulator, plain coil, plain make and break, and De Dion magneto plugs. It misfires badly when starting, front cylinder only fires; back one chips in now and then. It will fire regularly for a time and then start missing again, especially if I have a hill to climb soon after starting. When testing back plug I have noticed that when it does not spark I can hear a distinct knock in the coil. Do you think the coil is faulty?—E.A.C.

First of all, you should try changing the sparking plug; secondly, try adjusting the contact breaker with the engine running, and try to synchronise the two cylinders as far as possible. If one cylinder absolutely refuses to fire regularly, or does not fire at all, first of all carefully overhaul the external wiring, and if you cannot find the trouble send the coil away to be tested. You will get more satisfaction if you fit a magneto.

Gears for 3½ h.p. Sidecar.

(1.) What ratios would you recommend for a two-speed epicyclic gear to be fitted to a 1909 Triumph for use mostly solo, but occasionally with sidecar and passenger of eleven stones and driver twelve stones? (2.) What are the drawbacks to an epicyclic two-speed gear fitted to the engine-shaft?—P.A.S.

(1.) For sidecar work with the weights mentioned we should recommend gears of 5½ and 9 to 1. (2.) There are no serious drawbacks. All that can be urged against the type is the overhanging weight on the engine-shaft and the speed at which the gear has to run on the low speed.



This interesting chain-driven three-wheeler was built by Mr. Montague Smith of Islington. It is sprung front and rear, and has an additional seat for two children immediately behind the radiator. The air-cooled engine is situated under the driver's seat.

A Bad Earth Connection. Garage Charges.

I venture to ask your advice on a little trouble just arisen with my 1904 2¾ h.p. Minerva, which has a wipe contact and trembler coil. (1.) The spark is advanced by means of a Bowden wire pulling the case covering the cam forward. The boss on which this cover fits has worn somewhat, and the cover is a very loose fit. Consequently it appears that this may account for the misfiring which I am now suffering from. Could you tell me the remedy for this, or is a new case necessary? (2.) Another point I would like to bring to your notice is with regard to certain garage charges, seeing others have brought it up from time to time. I had occasion to go to a riverside village recently, and unexpectedly my accumulator gave out. I took it to a garage and left it thirty hours. When I called for it I was charged twice the amount I have ever paid at any place outside London before. I said I thought it rather much, especially for such a short time, and was told I could either take it or leave it. I had occasion again to visit this same district last week, and I ran out of petrol. My friend on his cycle offered to go and get me a gallon of petrol, and went to this same garage and asked for a gallon of Shell. The owner grunted and asked if some other kind would not do, as he did not think he had a two-gallon tin opened. "I'll put a gallon of this" (another make) "in a Shell tin; your friend won't know." Naturally my friend objected, and asked him again to let him have a gallon of Shell. The man then refused to serve it, and said he would not open a fresh tin for a gallon. We hear a good deal of road hogs, but there are "garage hogs" as well, it seems to me.—F.L.W.

(.) From reading your letter, it appears to be that the trouble is due to a bad earth connection between the contact breaker casing and the crank case of the machine, due, firstly, to the loose fit, and, secondly, to the amount of oil. The best way to overcome the difficulty is to bring a wire from the screw holding on the contact breaker case to some convenient nut on the crank case. This might cure the trouble. Also examine the mica insulation on the contact breaker plate. (2.) We fully sympathise with you as regards the garage charges for charging your accumulator. The best thing to do would be to note if the garage in question is officially appointed by any of the well-known motoring organisations, and if so report the trouble to headquarters. Of course, the attempt to palm off somebody else's spirit in a Shell tin was dishonest, but many garage owners absolutely refuse to "break" a tin—quite unjustly, we think, particularly as the Shell Co. supply gallon tins if so ordered.

Over-lubrication Difficulty.

I am experiencing some difficulty in the lubrication of the engine of my 1910 3½ h.p. two-speed Humber. I have to clean the plug about every fifty miles, and the valves and valve port and exhaust valve stem soon become coated with burnt oil. The silencer, too, has always been oily ever since the machine was new. I have tried several makes of oil, and varied the amount of oil, but I have not been able to stop the trouble. I clean the cylinder out every 1,000 miles, and find the carbon comes off easily from the cylinder head and piston, but there is an excessive amount of very hard deposit in both valve ports, and I have occasionally to clean the exhaust valve seating. I usually give the engine a quarter of a pumpful of oil every five miles (the pump is, I believe, a rather large one). I have also tried a pumpful given at intervals every thirty miles (this is the smallest amount I care to give), and find about an egg-cupful of oil comes out of the crank case when draining off. The engine will only stand one and a half pumps of oil when recharging the crank case. I weigh about 11 stones, gear is 4½ to 1, and my average speed about twenty miles per hour.—C.F

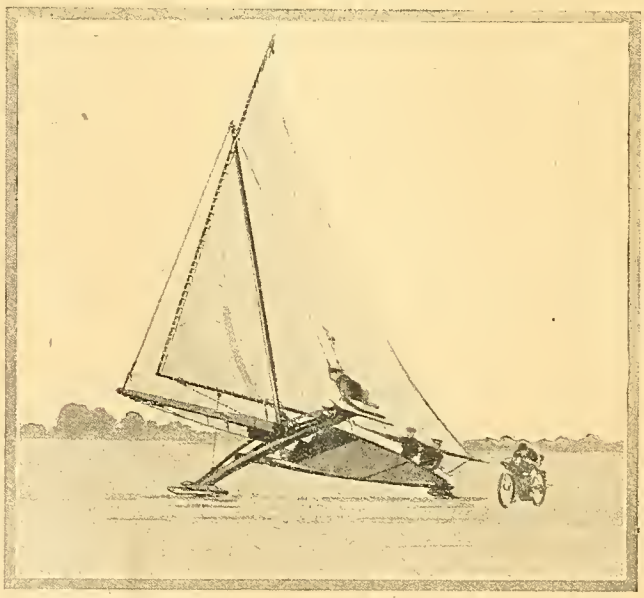
We are quite at a loss to account for the trouble unless the piston rings are badly worn and require replacing. Have you communicated with the makers on the subject? The amount of oil you give, namely, a quarter of a pumpful every five miles, is about correct. We should not advise you to give less, and are inclined to think that the valve of the pump is leaking, and allowing more oil to enter the crank case than you imagine. The petrol consumption is about right.

Failure to Start.

I shall be very glad if you can advise me on the following difficulty: I have a 1908 Triumph (magneto), which starts quite easily on the stand without misfire, but when I try to start on the road it fires once or twice and then gives up; sometimes there is a back fire also. It will run slowly on the stand, and appears in splendid condition until I want to start on the road. What can the matter be?—J.F.

When you are starting on the stand you are able to turn the engine faster than you can when you start on the road, and in consequence, we think the trouble may possibly be due to a choked jet or some stoppage in the feed pipe. A fault in plug would also cause the engine to behave in the manner described.

MOTOR CYCLE v. ICE BOAT.



A novel race between H. W. Kipp on an Indian and the Comet, one of the fastest Canadian iceboats. The distance was about a mile and a half over Toronto Bay, and the speeds were very close, each in turn taking the lead, but finishing a dead heat at between 50 and 55 miles per hour.

READERS' REPLIES.

Rusty Cylinders.

I would suggest to your correspondent blackleading the cylinders, then rubbing them up with a wire brush. This always looks clean and smart and wears a long time, the rust being removed first by wire brush. Dry mud can afterwards be brushed off, still leaving a good polish.—BK 535.

Substituting a Spray Carburetter.

With reference to your reply to "W.I.D." in your issue of March 30th, his trouble is due to too much petrol in surface carburetter. This can always be remedied by running the petrol out of the carburetter and putting it back in the tank. If level of petrol is kept as low as possible this carburetter is very efficient. If the needle valve requires grinding in the trouble will recur every time the machine is laid by for the night. I used one of these machines for five years, the last three with a Montgomery flexible sidecar gearing down 6 to 1. Eventually I fitted a B. and B., obtaining more power, but some increase in petrol consumption.—J. E. DOUGLAS SAMUEL.

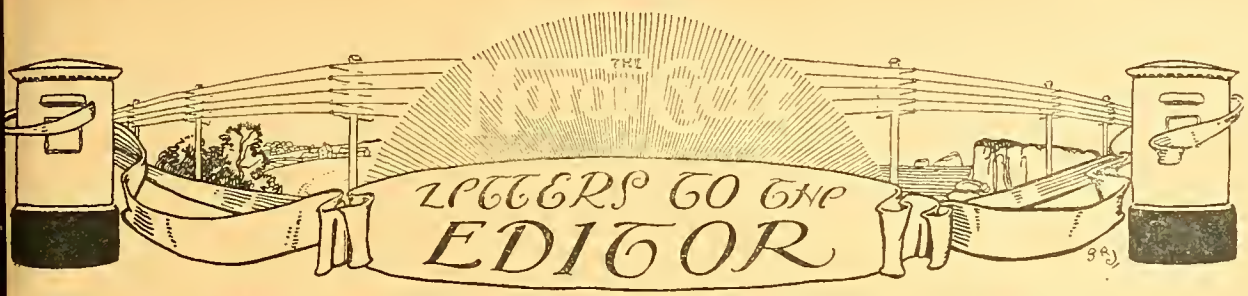
EXPERIENCES WANTED.

"E.W.B." (Shaftesbury). 1911 Scott, especially as regards the automatic lubrication and efficiency of radiator.

"Experientia Docet" (Cape of Good Hope). 1911 T.A.C., particularly as regards the inlet valves and springing, and the latter suitable for use on bad roads.

"E.B. le M." (St. Helen's). A attachment for a pedal cycle as regards starting, steering, and ease of attachment.

In our reply to "C.E.T." in the issue of the 6th we inadvertently mentioned that the agents for the Eisemann magneto were the United Motor Industries, Ltd. Readers who wish to obtain further information on the subject mentioned by "C.E.T." should communicate with the branch of the Eisemann Magneto Co., at 43, Berners Street, W.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Four-cylinder Engines.

[5541.]—I have read with interest Mr. Grelinger's ters in *The Motor Cycle* of 23rd February on staggered linders. I have been riding a four-cylinder machine for ne considerable time, and never once have I had occasion stop through overheating of the cylinders; in fact, I d with the F.N. the hotter the engine the better it ns.

E. P. LOWE.

East London, South Africa.

Hill-climbing.

[5542.]—In your interesting account of the hill-climbing npetition organised by the Westmorland Motor Cycle ub in the issue of April 6th, we observe that on the Singer h.p. which Mr. J. E. Deane rode, the gear is given as 5¼ 1, whereas the actual gear used was 4⅝ to 1. From formation received we understand that the gear of the ger was given to your contributor by guessing.

SINGER AND CO. (1909), LTD.
G. H. MANSELL, Sales Manager.

Low Registration Numbers.

[5543.]—To those of your readers who are about to ister their new machines, it may be of interest to learn t low numbers may be obtained in Clare County and negal, the only "two figure counties" in the United gdom, as far as I can ascertain.

ow numbers are more distinctive than high ones, and more m being available, the number plates present a neater more pleasing appearance. They are, moreover, more dily remembered, if one has reason to do so, and the hine is not available; and, lastly, they are cheaper, each mber or letter costing 3d. to paint on each plate used. A er, enclosing P.O. 5s., does the trick, no matter where may be living.

IE 57.

Hill-climbing and Twin-cylinder Sociables.

[5544.]—Having noticed several letters on the subject of hill-climbing powers of the A.C. Sociable, and the sug- ions of "Ilikum's" to put in an 8 h.p. twin engine, I ight some of your readers would be interested to know behaviour of these delightful little cars in India.

find the 5-6 h.p. engine gives ample power, and takes (with passenger) up any hill round here on the high gear. have reduced the running expenses to a minimum. Hav- considerably lowered the petrol level and also fitted an a automatic air valve in the top of the carburetter, my sumption is now sixty miles to the gallon.

was at first troubled with difficult starting owing to the mulator plug getting sooted up while running on the neto. This difficulty has been entirely overcome by using dge double pole plug for the magneto, connected to the mulator plug, thus keeping the latter in use the whole . I may say this has improved the running of the hine.

y A.C. is the greatest success, and I am delighted with The only improvements I should like would be a more ient silencer and some means of making the cooling fans more quietly.

ith regard to "Ixion's" frequent remarks *re* motor es for the colonies, I do not agree that they want extra rance. I have ridden over many rough tracks in South ica, Mauritius, and India, and have always found the clearance on standard models ample. The improvement that is required is in the springing. Ordinary spring forks rebound too much. Spring frames are needed, and I should say that something after the style of the A.S.L. device would have a great future in the colonies.

I have ridden motor cycles in the colonies for seven years with occasional holiday treats on the glorious roads at home, and all this time I have been a most interested reader of your most excellent paper.

LIEUT. R. T. PELLY.
Poona, India. Loyal North Lancashire Regiment.

Which Wheel Lifts? Experienced Sidecarists give Diverse Views on this Question.

[5545.]—Referring to the query "Which Wheel Lifts?" dealt with in your issue of the 6th inst., there can be, as you show in your reply, no doubt whatever in the case of a symmetrical vehicle such as a four-wheeled car or a tricycle. In such an unsymmetrical combination as a cycle and sidecar, however, the case is more complicated, for although centrifugal force must tend towards exactly the same result as in the other vehicles, the question is whether there are any tendencies in the opposite direction.

An experience I had recently bears on the point. While going down a gentle incline on a 3½ h.p. cycle with a rigid sidecar on the left, I slowed down and turned to the right in the attempt to wheel round and go back. When about half way round the back wheel of the cycle lifted slightly, causing the front of the sidecar to fall to the left, and my passenger was shot out neatly on to the ground. This appears to me to have been quite the normal effect of centrifugal force (as in the case of a tricycle), aided perhaps by the cycle being on a rather higher level than the sidecar.

As regards your suggestion (which appears at first sight inconsistent with the above) that, whether turning to the right or the left, the sidecar wheel tends to rise on account of its lightness, I agree that this would be true in turning to the left (I assume sidecar on left throughout) owing to centrifugal force, and I am disposed to agree that in turning to the right the same thing might happen, particularly if the sidecar be empty, owing to the cycle leaning over to the right and raising to an angle the sidecar ends of the horizontal attachments.

I suggest, therefore, (1) that in turning toward the sidecar the sidecar wheel invariably tends to rise owing to centrifugal force; (2) that in turning away from the sidecar the event is determined jointly by (*a*) the centrifugal force and (*b*) the lifting force of the leaning cycle, at all events on a rigid sidecar, these two forces acting in opposite directions.

I should be happy to furnish you with further similar experiences, but my passenger is not enthusiastic. C.J.

[5546.]—In answer to "Which Wheel Lifts?" one of my first experiences with a sidecar was taking a corner towards it too fast and throwing my passenger outwards over my head into the ditch. The machine was thrown on to its side with the sidecar wheel on top. This proves sidecar wheel lifts turning towards sidecar whichever side it may be.

I am equally satisfied that sidecar wheel lifts when turning away from it, because one can feel it doing so from the bicycle. The rider tends to lean inwards and so make his own banking. There is no banking, of course, but the sidecar wheel appears quite content in imagining there is!

Also, if the sidecar wheel were to keep on the road, how could it possibly get round the turn in the same time as back wheel of bicycle? It therefore lifts and takes the "shortest route." I admit that if weight of passenger and sidecar exceeds that of bicycle and rider, in turning away from the sidecar the bicycle should lift But as this never is the case, and bicycle invariably has all the advantage in weight over sidecar, the reverse is true in actual practice.

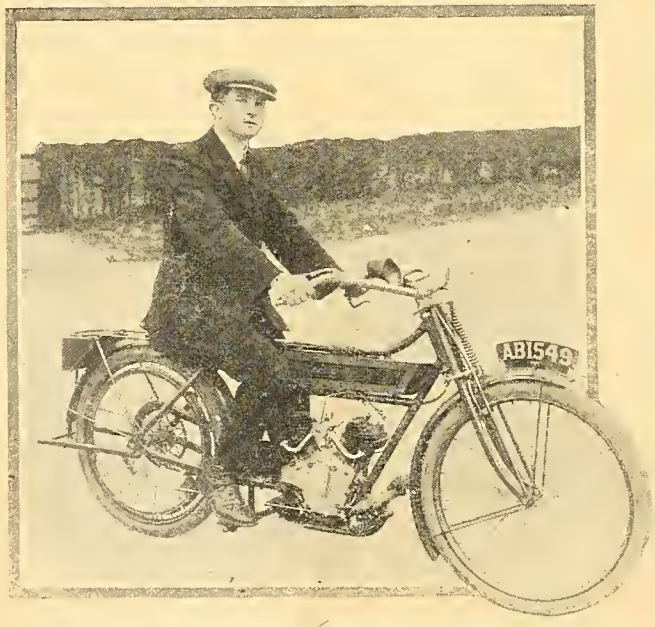
BK 535.

[5547.]—I notice in a recent issue you ask for sidecar drivers' experiences as to which wheel lifts on turning a corner at too great a speed. Of course, as you state, if the turn is towards the sidecar, the single wheel of the latter, being on the inside, lifts. This is quite what one would expect, as the centrifugal force, acting on the centre of gravity of the whole combination, tends to upset the vehicle outwards.

I may say that, in my experience, the sidecar wheel leaving the ground makes steering very difficult, if not impossible. If the turn is away from the attachment, however, I do not see how it is possible for the sidecar wheel to lift. The centrifugal force then is trying to drive this wheel into the ground. If any wheel lifted, it would be the back wheel of the bicycle. I fancy I read of a spill through this cause some years ago, but should think it could only occur with a very light machine, and would be helped by the driver sitting in the sidecar, leaving the saddle unoccupied. My own experience is that a quick turn away from the basket causes the steering wheel of the bicycle to hop sideways towards the outside of the curve, or, if the road surface is greasy, the whole lot will sometimes slide bodily across the road—trying to continue in a straight line instead of taking the corner. I consider a turn away from the sidecar puts a great strain on the frame and attachments. J. C. BENNETT MITCHELL.

[5548.]—I have driven various sidecars on both sides probably over 40,000 miles, and my experience coincides with the only possible correct theory, namely, that the inside wheel always lifts, the outside never, if the sidecar is on the outside. The only wheel that does lift is the front wheel of the bicycle, jumping and not gripping the road. If the corner be taken too fast the back wheel cannot lift owing to weight on it, and the near wheel is forced into the ground. E. S. NEW.

[Mr. New's opinion is the most emphatic, but we think that users of skeleton sidecars can prove by experience that the sidecar wheel *does* lift.—ED.]



Frank W. Smith and the 2¾ h.p. two-speed chain-driven Royal Enfield on which he was so conspicuously successful in the Oxford M.C.C. open hill-climb. He won Classes II. and VI. on formula.

Detachable Two-speed Gears.

[5549.]—I read with interest "Ixion's" paragraph under the above heading in a recent issue of your most interesting journal. I have had one of the N.S.U. two-speed gears fixed on my engine-shaft since I first purchased my new machine this year, but up to the present I never dared to attempt to take it off. However, upon reading the paragraph I went into the motor house, and had the gear off and a fixed pulley put in its place in less than three minutes.

As I use my machine daily for business purposes, and do not require the two-speed gear on my round, I shall in future only put it on when using my sidecar, and when touring in a flat district shall probably take it off and replace it on the road. The detaching of the two-speed gear was simplicity itself.

As the gear is such a perfect one, this will be a great advantage, and will give me practically two machines, as "Ixion" suggests. The only fault I have to find is that the pulley flanges seem to wear very quickly in this district, the roads being made of flints.

My present two-speed pulley is quite worn, and has only done 850 miles. Would not hardening of the pulley flanges be an improvement?

To those who use sidecars this gear is a boon, for it has to be a very severe hill which the machine will not mount with two up when on the second gear, 8 to 1.

The machine I write about is a 3½ h.p., and has an extremely powerful engine, although only 80 by 80. It smashed up one of the best-known rubber and canvas belts of inch section in a little under 500 miles. I wrote to the makers of the belt, from whom I could obtain no redress. I pointed out to them that if push cyclists had to renew their chains at this distance and at about one third the cost there would be no cyclists.

Since then I have fitted a Whittle belt and have had no more belt troubles.

When one comes to consider the cost of belt transmission it seems peculiar that it is still so popular. A pulley will run probably 2,000 miles and then want renewing, whilst if one uses a rubber belt, costing nearly £1, it is considered to have *done well* if it runs 2,000 miles, which distance I do in about two months. CLARENCE PONTING.

International Reliability Trials.

[5550.]—Being at the moment engaged on the preliminary arrangements for our French tour and inter-club competition, to take place next August, I have read with considerable interest the letter from the President of the Motor Club Liègeois appearing in your issue of 30th March.

Your correspondent deplores the failure of Mr. Citroe to fall in with the idea of a British *v.* Dutch competition and it will consequently interest him to know that my club the N.W. London M.C.C., was at the time that suggestion was made already corresponding with the M.C.C. de Lyon France, in regard to the competition, the details of which are now well forward.

In order to reach Lyon we are travelling to Louviers the first day, Louviers to Nevers the second day (August 4th) and to Lyon on the Saturday. If the members of the Liège Club would care to join us in a competition of any sort over that section from Louviers to Nevers (about 250 miles), I can answer for my club being only too willing to fall in line.

This would provide the opportunity desired by your correspondent of comparing the merits of the British and Continental machines, in addition to the light which I hope the Lyon competitions will throw on the same subject.

Alternatively, we could possibly arrange a meeting place at, say, Rouen or Amiens, on the return journey, and possibly this would be a less arduous affair for the Belgian riders.

Should neither of these suggestions appeal to the Liège Club, I am afraid my club could not offer any other date this year, except in this country, but I should be most happy to receive suggestions from the President regarding a future competition, and to do all I can to mature, with his assistance, any scheme which will further the social and competitive intercourse between the riders of both countries.

H. J. POOLEY,
Vice-captain N.W. London M.C.C.

Automatic Carburetters.

[5551.]—"Ixion," in his remarks on the above subject your issue for April 6th, draws attention to the fact that tomatic carburetters are not favoured by motor cyclists. is is probably due to the fact that the earlier types were ything but automatic for all engine speeds, and that the tomatic action relied on springs which altered in strength er some use. After trying quite a number of carburetters various types, I have finally settled down to a J.A.P. tomatic racing type as giving the best all-round results. at it gives both power and economy is shown in my ning a first and second in the Herts County A.C. Mem-'s' Hill-climb last May, and later in the year doing three es more on my allowance than any other competitor in M.C.C. Petrol Consumption Trial.

That it *is* automatic is shown by the running in the rol Consumption Trial, where the engine revolutions ied from 600 to over 2,000 per minute by simply opening throttle. I have an automatic carburetter I made some rs ago, which relied on the gradient of the road to set strength and quantity of the mixture, and a uniform ed could be maintained without any levers.

ts only drawback was that it was necessary to place it front of the engine, and this caused trouble in the winter h freezing up. HAROLD KARSLAKE.

Interchangeability of Tyres.

552.]—With reference to the leaderette in your last e respecting "Interchangeability of Tyres," I have sure to inform you that this question has for many ths past engaged the attention of a sub-committee of the or cycle section of this Union, comprising Messrs. Banks own Bros., Ltd.), Collier (Collier and Sons), Marrians elon and Moore), Tessier (Bat Motor Manufacturing Co.). Williamson (Rex Motor Manufacturing Co.), specially ointed to secure standardisation of rims.

he sub-committee has been in communication with the cipal tyre manufacturers, and the whole question is being sued in the hope that standardisation of diameters and umferences may be adopted by all tyre manufacturers.

ou "confess that the disadvantages to makers adopting dard sizes are not obvious to you." A further considera- will, however, convince you that the difficulties to be rienced are that, inasmuch as tyre manufacturers' plants based on different diameters and circumferences, many manufacturers must scrap their expensive moulds before dardisation is attained.

point this out to you, not as an insuperable obstacle, but rder that both you and your readers may appreciate that er more than a stroke of the pen is necessary to bring t this admittedly desired reform. In any case, you may it for granted that motor cycle manufacturers as well as r tyre manufacturers are fully alive to the desirability tandardisation in the interests of both the trade and r cyclists, and I hope at some date in the near future able to advise you of satisfactory progress to that end.

ALF. BEDNELL.
etary, The Cycle and Motor Cycle Manufacturers' and Traders' Union, Ltd. (formerly the Cycle and Motor Trades Association).

Hill-climbing.

[5553.]—The "Calverley Cutting," to which your correspondent Mr. Bradley draws attention, is undoubtedly one of the steepest hills in the West Riding of Yorkshire, and, as such, one is surprised that it has never come within the purview of either the Leeds or Bradford clubs. I know the hill well, for I have thrice attempted in vain to surmount it, and, making a comparison from what I know of Sutton Bank, Porlock, and Beggar's Roost, I fancy the gradient at its worst part will be steeper than 1 in 5. The hill, which is situate about midway between Leeds and Bradford, has the virtue—so far as it facilitates speed and lessens the danger of accident—of being perfectly straight and laid with a very good surface. For a test hill it would be ideal, though as none but foot passengers have a right of way over the road it might be necessary, before it could be used for a hill-climb, to obtain permission. A. GLOVER.

Best American and English Times.

[5554.]—I see nothing absurd about the A.S.L. Co. kindly offering to allow Mr. Godfrey to put his engine in one of their frames. In fact, they are obviously trying to help him to secure a world's record for speed, as everyone knows that their springs do not lash at any speed, *vide* Mr. Martin, and so Mr. Godfrey will be able to beat even de Rusier's marvellous American records. Of course, we all know that Mr. Godfrey is an expert in the motoring world, but I again fail to see that even his tuning up could make the tank, for instance, or even the saddle, affect his speed. I do not know if he includes these in his other features, besides the engine, which are conducive to high speed. ELSIE.

[5555.]—In his letter, No. 5510, in your issue of the 6th, Mr. Godfrey claims that "there are other features about the Indian motor cycle besides the engine which are conducive to high speed," and his objection to our proposal that he should allow us to put his engine into an A.S.L. frame is, from his point of view, a reasonable one.

Therefore, we propose that Mr. Godfrey should allow us to fit an A.S.L. front fork only to his machine, when we will guarantee to prove to Mr. Godfrey that it is quite possible and quite safe to ride it a complete lap at 76 m.p.h., we to undertake all risks of damage to his machine and pay all contingent expenses. AIR SPRINGS, LTD.

Horse-power Rating.

[5556.]—Mr. F. J. Clayton [5515] does not suggest any method of power rating that will appeal either to the manufacturer or to the buyer, for what the latter wants is to compare one machine with another by a method that is not open to doubt. Then, again, the b.h.p of an engine would not be so high here as in the United States of America, where, so I read, there is a marvellous atmosphere that helps to add ten miles per hour to the speed of a machine, so I conclude it adds to the b.h.p.

Now anyone can compare machines of any good make by their cubic capacity, and, what is more, it is the method used by *The Motor Cycle* in racing results. My proposal was to make the method universal, and to make "four hundred and ninety-nine cubic centimetres" read 4.9.

A. BIRT.

A general view of the competitors, spectators, and their machines on Kirkstone Pass. Looking towards the finishing point of the hill-climb. (See page 404).

CURRENT CHAT

TIME TO LIGHT LAMPS

(GREENWICH)

Apr. 20th	... ...	8.3 p.m.
,, 22nd	... ...	8.6 p.m.
,, 24th	... ...	8.9 p.m.
,, 26th	... ...	8.13 p.m.

SPECIAL FEATURES

Holiday Runs and Competitions.
Sidecar Topics.
Progress in the Midlands.

Lady Motor Cyclists.

Among the recent converts to the motor cycle in the Perth district is Miss May Senior, who drives a two-speed Douglas quite skilfully.

Incorrect Results of Kop Hill-climb.

Another of those unfortunate errors occurred in announcing the results of the Oxford M.C.C. Kop hill-climb, two classes being affected. The revised positions are given in this issue.

Saturday's Quarterly Trial.

The following additional entries have been received for Saturday's Quarterly Trials: W. B. Gibb (2¾ h.p. Douglas), M. A. Wilson (3½ h.p. P. and M.), and G. N. Higgs (5 h.p. A.C.). T. Atkinson is riding the 4 h.p. New Hudson, and not Bell, as given on page 411.

Prizes for the Next B.M.C.R.C. Meeting.

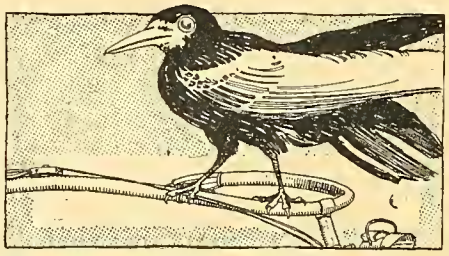
Messrs. Rudge-Whitworth, Ltd., have presented a silver cup for the best performance of a twin-cylinder machine, and Messrs. Collier and Sons have decided to present a cup to the rider of the best single-cylinder motor bicycle in the one hour (Senior) Tourist Trophy race at the B.M.C.R.C. meeting on May 26th.

The Tourist Trophy Races.

The Manx roads are just now in fine order. The portions which constitute the T.T. course have received special attention, and those who are interested in the "motor cyclists' Derby" will have good reason to feel thankful to the Highway Board's new surveyor. The mountain road—high and dry—is well nigh perfection—one might say "wasting for the race"—and what an engine test it will afford. Many competitors will be eager for practising at the earliest possible date, but the local authorities will not, after all, grant any permit for that purpose prior to the week provided for by the A.C.U. in the race conditions.

An Attempt on the Hour Record.

Godfrey's record of 59 miles 1,350 yards on a 3½ h.p. Rex, made on November 24th, 1909, still stands, though G. E. Stanley, on a 3½ h.p. Singer (85 × 88 mm.), on Thursday evening last made a gallant attempt to better it. He started at 4.30 p.m., and began reeling off the laps at over 61 m.p.h. Disaster, unfortunately, overtook him in the tenth lap, as he had to stop for a broken valve. It was a great pity, as he was going extremely well, and covered one lap at the rate of 62 m.p.h. He restarted at 5.31 p.m., but he did not approach his previous speed, and rapidly fell below the requisite standard owing to a lengthened valve stem, and eventually he was put out of the running by a broken petrol pipe after threequarters of an hour's running.



Cyclist Fined for Obstruction.

A pedal cyclist was successfully prosecuted by the A.A. and M.U. at Highgate Police Court on the 12th for obstructing a member's motor car. The cyclist refused to draw into the near side, and obstructed the car for about a mile. The chairman of the bench made some strong remarks on the necessity of road users helping each other.

Saturday's Quarterly Trial in Yorkshire.

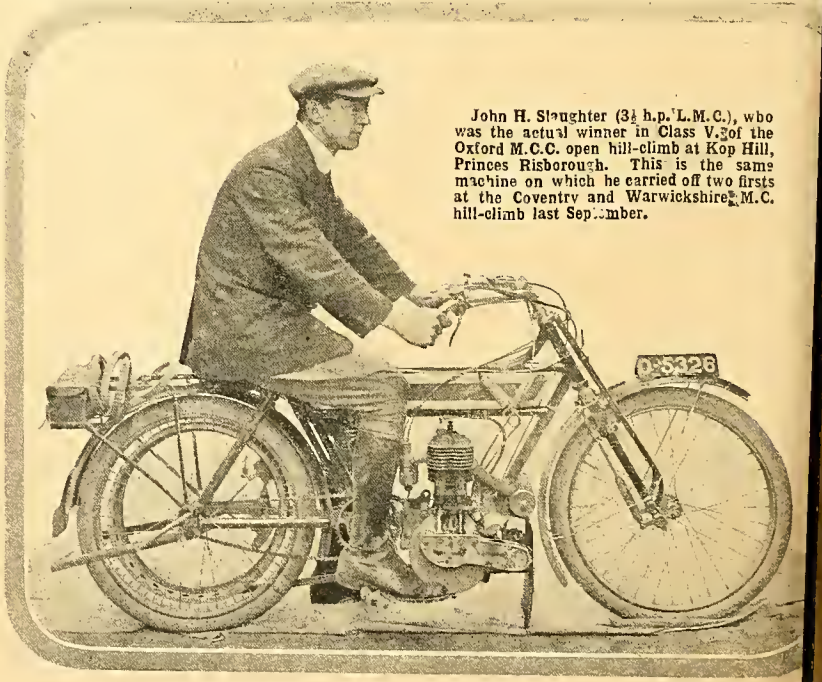
The Auto Cycle Union would be very glad of the assistance of riders in the North country in checking, or otherwise officiating on the occasion of the April Quarterly Trials, which will be held over the Harrogate, Sutton Bank, Whitby, Lythe, Saltburn, Harrogate course on Saturday next, the 22nd inst. This should prove the most sporting Quarterly Trial ever held, and one of absorbing interest, both to spectators and competitors. Mr. F. Straight, the A.C.U. secretary, will be at the Clarendon Hotel, Harrogate, to-morrow (Friday), and will welcome offers of help.

Metropolitan Police Traps.

A trap is being worked in Fitzjol Avenue, Hampstead; it is one furlong length, and starts from the junction Maresfield Gardens and the Avenue. correspondent who was caught there day last week says that, although started from a dead standstill and ent the trap at about 12 to 15 m.p.h., was confronted by two plain clo officers and one in uniform. Altho the two plain clothes men said they working independently, they asserte had covered the furlong in 15 secs. m.p.h.

Martin Breaks Record.

On a cold and windy day last Harry Martin riding a 2¾ h.p. Ma Jap broke the standing mile British re for 76 mm. × 76 mm. engines at Can Town. Mr. F. Straight, the secretar the Auto Cycle Union, acted as keeper. Martin made two attempts, and then after adjusting contact breaker was successful, be C. E. Bennett's previous performanc 1⅘s. Martin's actual time was 1m. An attempt was made to capture the miles record for the same sized e which stands at 5m. 40⅖s.; this the mile record have stood since A 10th, 1907, but the freshening wind an end to any further trials at 1 p.



John H. Slaughter (3½ h.p. L.M.C.), who was the actual winner in Class V. of the Oxford M.C.C. open hill-climb at Kop Hill, Princes Risborough. This is the same machine on which he carried off two firsts at the Coventry and Warwickshire M.C. hill-climb last September.

W. E. Grange climbing Stoupe Brow for the first time.

empt on Record at New Brighton.

On Monday last Mr. Baxter made an empt on the New Brighton track one e record which is held by A. Moor- se. The record is 1m. 5s., but Baxter ld not do better than 1m. 11⅘s. Later tried to beat his own five miles record the same track, and tied with it in 30s. His machine was a twin Rex. ch missed fire part of the way, and he had tyre trouble; one tyre cover was n partly through at the side after the attempt, so Baxter wisely refrained n riding it further.

d "Trials" at Hyeres.

he following machines were ridden by winners of the flying kilometre road ls at Hyères on the 9th inst.: Class -Up to 2 h.p., Alcyon, time 46s. Class —2½ h.p. Magnat-Debon, 43⅘s. Class —Réné-Gillet, 41⅘s. The road race n Marseilles to Hyères, 89 kilometres miles) was won on a Magnat-Debon in 11m. Another machine of the same ke was second in 1h. 17m.

Problem of Timing.

large number of replies have been ived in connection with the Northern gue offer of £1 1s. for the best sugges- for timing speed events, which unt this journal doubled. All articles t be in our hands before the end of month. The conditions are: (1) 250 ds maximum; (2) use one side of the er only, typewriting for preference. Editor's decision will be final.

d Dangers at Night.

he recent sad fatality to a young ord motor cyclist is another argument improved legislation with regard to proper lighting of vehicular traffic. the case in point the jury, although returned a verdict of "accidental th," and said that they considered no me attached to anyone, agreed that antern used to light the timber y was not all that could be desired is not unreasonable to suggest that nsy timber waggons, always a source anger even in daylight, should not be mitted to travel on our roads after k. In the evidence at the inquest it shown that the lamp (a candle lamp) hung on the draw bar of the vehicle on the inside of the front wheel.

Dimensions of Lightweight Engines.

We are asked to point out that a printer's error occurs in the Bristol Bicycle and Motor Club open hill-climb regulations for the 29th inst. The capacity of the engines in the lightweight class should be 300 c.c. for singles and 340 c.c. for twins.

B.A.R.C. Membership.

Owing to the increase in the number of members of Brooklands Automobile Racing Club, an entrance fee will be instituted for all members joining the club on and after the 1st June, 1911, and the subscription to the club will be raised to four guineas to all new members joining the club on and after the 15th April, 1911. A rebate of one guinea will be made in the subscription to members of the Royal Automobile Club and clubs associated thereto, Royal Aero Club, Motor Club, and Automobile Association and Motor Union.

FUTURE EVENTS.

Apl. 22.—A.C.U. Quarterly Trial (Yorkshire Centre). Starting from Harrogate.
" 29.—Bristol B. & M.C. Open Hill Climb.
May 6.—Herts. County A.C. Open Hill Climb
" 27.—Herts. County A C.Open Speed Trials.
June 2-5.—M.C.C. London-Edinburgh Run and and Return Journey for the M.C.C. Challenge Cup.
" 10.—Birmingham M.C.C. Open Hill Climb, Shelsley Walsh.
" 17.—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
" 30.—Junior Tourist Trophy Race in the Isle of Man.
July 3.—Senior Tourist Trophy Race in the Isle of Man.
" 4.—Kilometre Speed Trials on Douglas Promenade, Isle of Man.
" 8.—A.C.U. Metropolitan Centre Eliminating Trial for Club Championship

The Oxford M.C.C. Hill-climb.

C. Gordon Bell rode a 3½ h.p. Norton in Class III. as well as in Class VIII. at Kop Hill on the 8th inst.

Motor Cycles in Egypt.

Three years ago, writes Mr. Douglas Allen, there were three motor cyclists in Alexandria, Egypt, but the number has now increased to fifteen.

Stoupe Brow Climbed.

On the 13th inst. W. E. Grange, accompanied by T. Atkinson and H. W. Fortune, rode from Harrogate to Scarborough, and there met J. W. F. Tranmer, H. Frain, T. Webster, and W. Jackson, and all rode on to the famous Stoupe Brow to witness an attempt by Grange to climb the hill. He was the only one to climb it at the first attempt and took 6 mins. 6 secs. He rode a 3½ h.p. two-speed Bradbury. He, however, could not start from the beach, as he was unable to obtain a foothold in the loose stones.

Catalogue Artists and the Motor Cycle.

An artist may be able to portray a landscape or a figure well, and usually excels in one or the other, but seldom in both. Likewise, one who draws mechanical articles should be a specialist, or he is likely to produce weird contraptions which make a motor cyclist laugh. A reader named W. H. Browne has sent us a leaf from a West End clothier's catalogue depicting a pretty curly-haired boy clothed in overalls and mounted on a bicycle which has connected to it a motive power resembling a spiral spring. In some mysterious manner this spring is transmitting power to a chain case. Our correspondent says he and his friends are anxious to get in touch with the makers of this new engine, which is apparently designed on some fresh principle unknown to motor cyclists. Can it be the ideal motive power we are all waiting for? Needless to say, the clothing is correctly drawn and looks very nice, but the motor cycle is reminiscent of some of the early attempts of comic papers faithfully to reproduce the petrol-propelled cycle. They do somewhat better now, but one often receives a rude shock when they attempt humorous pictures of motor cyclists' adventures.

The ladies in the Herts. County A.C. tour to Harrogate and back. Miss Berend is an absentee.

FIRST LADIES COMPETITION

INTER-TEAM RELIABILITY TRIAL & HILL-CLIMB

ORGANISED BY THE HERTS COUNTY A.C. (MOTOR CYCLE SECTION)

FOR the second year the Herts County A.C. inter-team reliability trial to Harrogate proved an immense success. The start was on Good Friday at 7.30 a.m. from Barnet, and 44 competitors duly started under the most pleasant conditions.

The tour was in reality a triple event, and pride of place must be given to the ladies, who numbered four in the first contest for *The Motor Cycle* Cup; secondly, the inter club contest for the Service Cup; and, thirdly, individual competitors for silver cups offered to all gaining 95 per cent. of the marks in each of the three sections of the trial. The first and last sections were the outward and homeward journeys, the middle section being a hill-climb on the Saturday. In this latter event the following clubs were represented: Bradford M.C.C., Harrogate M.C.C., Ilkley M.C.C., the N.W. London M.C.C., N. Middlesex M.C.C., and the Herts County A.C.

Reverting to the start of the competition, the following were the lady motor cyclists who took part:

Mrs. C. C. Cooke (3½ h.p. free-engine Triumph).
Mrs. H. Wade (3½ h.p. two-speed Scott).
Miss Lottie Berend (3½ h.p. free-engine Brough).
Miss Rose Hammett (2¾ h.p. two-speed Douglas).

To the above must be given the greatest praise for starting on such an arduous trial. It was no doubt the length of the contest that deterred many others of the fair sex from participating. Two hundred miles in a single day is undoubtedly a real test of the endurance of the rider as well as of the reliability of the machine. The individual riders were:

A. Gutteridge (3½ Triumph)
E. de G. Birch (3½ Scott)
H. O. Dunn (3½ Triumph)
L. S. Dunn (3½ Triumph)
J. W. Thomas (2¾ Douglas)
F. J. Beard (3 Wanderer)

Three clubs were represented in the contest for the Service Cup, the riders composing the teams being as follows:

HERTS COUNTY A.C.

F. Hardy (5 V.S. and s.c.)
C. C. Cooke (3½ Triumph)
G. S. Carter (5 Matchless)
E. C. Jarvis (3½ Triumph)
W. Cooper (3½ Bradbury)
J. S. Harwood (3 Wanderer)
H. Lister Cooper (3½ Triumph)
E. A. Colliver (3½ Zenith)
S. T. Tessier (5 Bat)
Capt. Seymour (3½ Triumph)
Bert Yates (3½ Humber)
H. Greaves (2¾ Enfield)

N.W. LONDON M.C.C.

E. Westacott (3½ Triumph)
A. J. Dreydel (3½ Premier)
S. H. Asling (3½ Bradbury)
G. E. Purchase (3½ Triumph)
R. L. Printz (5 Bat)
G. H. Hollis (2¾ Douglas)
H. J. Pooley (3½ Premier)
Hal Hill (5 Bat)
Glynn Rowden (3½ Triumph)
H. C. Bean (6 Matchless)
R. Davenport (3½ Triumph)
A. Phillips (7 V.S. and s.c.)

NORTH MIDDLESEX M.C.C.

Miss Hammett (2¾ Douglas)
Miss Berend (3½ Brough)
G. L. Fletcher (2¾ Douglas)
W. S. Bennett (3½ Bradbury)
T. A. Brown (3½ Rudge)
D. G. Blakey (3½ Bradbury)
A. V. Deacock (3½ N.L.G.)
N. C. Dear (2 Humber)
S. F. Garrett (5 Indian)
H. C. Mills (3½ Premier)
J. V. Robinson (2¾ Douglas)
S. B. White (1¼ Wanderer)

A new section of road was included this year embracing Peterborough, Bourne, Sleaford, Lincoln, Gainsborough and Bawtry, whence the Great North Road was joined, along which the competitors rode as far as Wetherby, where the left fork was taken to Harrogate. The going was fairly good, albeit dusty. At Stevenage, Lister Cooper joined the party, having been delayed by magneto trouble. The first thirty miles was a non-stop section, and all proceeded well until we came upon Geo. Brough assisting Mr. and Mrs. Hardy, who had, unfortunately, experienced tyre trouble thus early, nor did the puncture fiend escape them throughout the run. Brough had journeyed from Nottingham to accompany Miss Berend to Doncaster, where he boarded the train for London to be ready for the start of the Jarrott cup competition.

The first check was a mile from Biggleswade, and proved somewhat of a surprise, and some grumbling ensued, but it was ultimately found that most were fairly accurate. Breakfast was taken at the Swan Hotel, Biggleswade, and no sooner had the competitors been despatched than Hal Hill had to dismount to clean a plug, and Deacock had perforce to adjust a belt. The ensuing section was more or less "go-as-you-please." After climbing Alconbury Hill Bert Yates was encountered in the throes of tyre troubles.

A Stop for Replenishments.

There was no further incident until Norman Cross, where the competitors halted to refresh themselves or replenish the tanks. There was a goodly crowd at Peterborough to watch the competitors file through the cathedral city, the ladies, of course, attracting considerable attention. The Fen district with its flat lowlands proved somewhat uninteresting, and nothing occurred except an occasional puncture. Printz, on his Bat, was galled to pick up a nail within

Scene at the start from Barnet. W. Cooper (Bradbury) being despatched by W. Pratt.

t Ladies' and Inter-team Trial Competition.—

at of the luncheon stop at Bourne, and whilst his *confrères* took of a meal Printz was busy with his repair outfit. He Mr. Hardy were the only non-arrivals. On the way to coln Mrs. Cooke's tyre deflated, and her husband halted assist with the repair. It was already remarkable the ber of tyre troubles in this year of grace. Truly, there ns to be no end to punctures. In some parts two or three petitors would be seen within a like number of miles, and king on patches with the clouds of dust raised by the ing riders was not the easiest of operations. It was ed good, however, to observe the spirit of *camaraderie* h was prevalent on all sides, and one felt happy to be ng such a sporting set of fellows. One particular in- ce of this is worth mention. Lister Cooper came upon ain Seymour, and, observing his dilemma, dismounted, after effecting adjustments tried his machine on the before returning it to its delighted owner.

o stone setts in Lincoln were not appreciated, nor was ixpenny toll at Dunham bridge, Gainsborough, in return which amount the competitors were privileged to ride one of the most bumpy sections of the route. The was followed for some miles, and the wind bringing it clouds of dust proved highly discomforting. Joining amous Great North Road at Bawtry, a good run was to Doncaster (check), where tea was arranged, and after the last section of the run was entered upon. Wade had some little difficulty in restarting her Scott. vind increased in severity as the riders journeyed further , and by the time the Yorkshire moors were reached it blowing great guns, to use a nautical expression. ock, who was riding the only battery-ignited machine in m, stopped to repair a broken high-tension wire, and nore stopped by the wayside repairing tyres. At Aber- Mrs. Wade deemed it advisable to replace the transfer s of her two-stroke engine, which took so much time t was almost dark when she got going again, and subse- y lamp troubles delayed her until 9 p.m. Most of the titors, including the other three ladies, completed the efore dark, and Mrs. Cooke, the first arrival, was siastically cheered. J. S. Harwood was towed into gate, as a broken inlet valve jammed in the guide of his erer. The accommodation at the Clarendon Hotel was to the utmost, and many had to seek shelter elsewhere.

Saturday's Programme.

Saturday a move was made for a steep hill near Bolton . Halton Moor, after weighing operations had ompleted in the morning, and as over 100 entries were programme there was promise of good sport. The r was again fine overhead, but a stiff breeze blew in eth of the competitors. The measured stretch was imately threequarters of a mile, and the hill con-

Eager contestants for A. S. Phillips's 5/- "breakdown" prize.

J. J. Cookson (Matchless) finishing in Saturday's hill climb on Halton Moor.

sisted of a series of steps, the gradient being as steep as 1 in 7 in parts. The surface was rather rough and loose. The organisation of the contest was not perfect, and the prevalence of traffic led to several narrow escapes from collisions. The following were the results:

CLASS III.—Flexibility. Single-geared single cylinders.

		Difference. M. S.
1.	W. E. Grange (3½ h.p. Bradbury) ...	3 8
2.	H. Lister Cooper (3½ h.p. Triumph) ...	2 41⅕
3.	A. J. Dreydell (3½ h.p. Premier) ...	2 14⅕

Most of the competitors in this class failed in the slow test.

CLASS IV.—Lightweights. Weight 146 lbs., c.c. 400.

		Fig. of Merit.	M. S.
1.	G. Patterson (2½ h.p. New Hudson) ...	.78 ...	1 16⅕
2.	G. Dixon (2½ h.p. New Hudson) ...	.83 ...	1 22⅘
3.	H. Greaves (2¾ h.p. Royal Enfield) ...	1.441 ...	1 51⅘

N. C. Dear (2 h.p. Humber) pedalled and Miss Hammett (Douglas) dismounted.

CLASS V.—Touring singles.

1.	G. Patterson (2½ h.p. New Hudson) ...	.78 ...	1 15⅖
2.	G. Dixon (2½ h.p. New Hudson) ...	.86 ...	1 26⅗
3.	W. E. Grange (3½ h.p. Bradbury) ...	1.23 ...	1 18

A. N. Gutteridge (Triumph), D. G. Blakey (Bradbury), and P. Brewster (Norton) dismounted.

CLASS VI.—T.T. singles.

1.	W. G. McMinnies (3½ h.p. Triumph) ...	.970 ...	1 6
2.	P. Brewster (3½ h.p. Norton)	.978 ...	1 10
3.	H. Lister Cooper (3½ h.p. Triumph) ...	.98 ...	1 5

CLASS VII.—Touring twins.

1.	S. F. Garrett (5 h.p. Indian)	1.311 ...	1 17⅖
2.	G. S. Carter (5 h.p. Matchless) ..	1.405 ...	1 11⅖
3.	E. de G. Birch (3⅝ h.p. Scott) ...	2.068 ...	2 7⅘

S. T. Tessier (Bat) dismounted; misfiring.

CLASS VIII.—Any single.

1.	G. Patterson (2½ h.p. New Hudson) ...	.826 ...	1 19⅗
2.	G. Dixon (2½ h.p. New Hudson) ...	.861 ...	1 26⅖
3.	P. Brewster (3½ h.p. Norton)	.938 ...	1 7⅕

W. G McMinnies (Triumph) broke belt. There were several narrow escapes in this class, at least three competitors overtaking others on the hill.

CLASS IX.—Any twin.

1.	S. F. Garratt (5 h.p. Indian)	1.284 ...	1 15⅘
2.	Hal Hill (5 h.p. Bat)	1.386 ...	1 11⅗
3.	J. J. Cookson (8 h.p. Matchless) ...	1.426 ...	1 5

CLASS X.—Any machine.

1.	S. Crawley (3½ h.p. Triumph)	1 2
2.	S. Grange (3½ h.p. Triumph)	1 3⅖
3.	H. Lister Cooper (3½ h.p. Triumph)	1 4

The winner is eighteen years of age and scales 6 stones. It was his second competition.

Winners of the Phelon and Moore Cup, for the best aggregate performance of a team which had to consist of one lightweight, one twin, and four single-cylinder riders:

Weighing in at Harrogate before the hill-climb.

The Herts County A.C. proved winners with the following representatives:

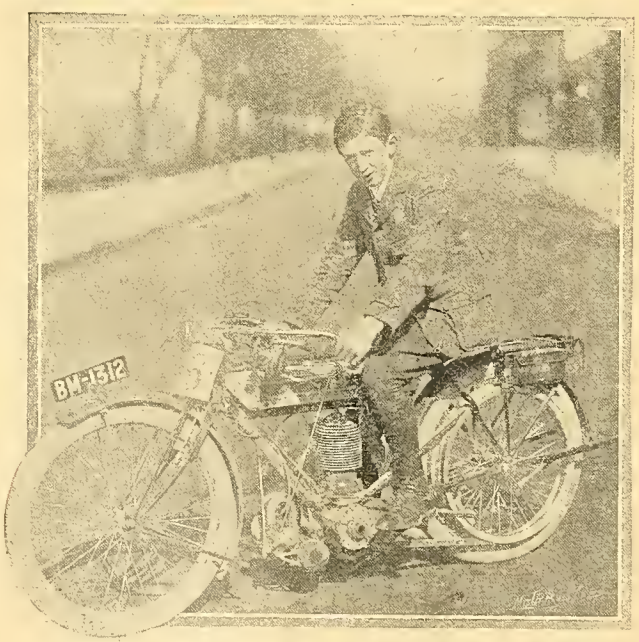
H. Greaves (2¾ Enfield)	C. C. Cooke (3½ Triumph)
G. S. Carter (5 Matchless)	W. Cooper (3½ Bradbury)
Lister Cooper (3½ Triumph)	Bert Yates (3½ Humber)

The N.W. London M.C.C. was second and the North-Middlesex M.C.C. third. The Northern representatives were unable to find a complete team.

In the absence of Mr. F. Straight, who had by some misunderstanding been left behind, the times were taken by Messrs. D. K. Hall and H. W. Fortune, whilst Mr. and Mrs. Cooke worked like Trojans on the results.

Saturday evening was devoted to song and mirth, and Mr. W. Cooper proved himself an able chairman. Mrs. Wade treated the assembly to delightful whistling solos, whilst Hal Hill proved himself as adept at the piano as he is in handling his T.T. Bat. Mr. and Mrs. F. A. Hardy had meanwhile arrived at Harrogate.

On Sunday morning a photograph of the combined clubs was taken in the hotel yard, and later over a score tried to diagnose an elusive fault in A. S. Phillips's V.S. twin, the owner having almost exhausted his efforts and offered 5s. reward for a cure.



S. Crawley (Triumph) who won the open class. His age is eighteen.

The Return Journey.

The move for home was commenced at 7.30 a.m. on M day, all except J. S. Harwood (Herts County A.C.) of survivors of the outward run duly starting. It was announ on the previous evening that the Herts County A.C. t was leading in the tussle for the Service Cup with an ag gate of 49 marks lost, as compared with the N.W. Lon Club's 52, and North Middlesex M.C.C. 151.

The sky was overcast when the competitors turned t backs on the comfortable headquarters, but, wonder of w ders the conditions overhead improved as the morning w on, and the sun burst forth for the fourth consecutive The loose flinty roads soon began their deadly work, for or three competitors stopped within the first ten miles to their tyre pumps, the official car also being delayed. Th after all went merrily for some miles, including A. S. Phill who had with dogged persistency conquered his magi troubles. Later we overtook Miss Berend with her Bro on the stand, but no further assistance was needed; ind it seemed to us that she was literally mobbed with e assistants. It was quite a feature of the run the way petitors assisted the ladies. They were favourites, every

Start from Harrogate of the return journey of the Inter-club team to 7-30 a.m. on Easter Monday.

The section from Wetherby to Doncaster was to be cov without a stop, but E. C. Jarvis (Triumph) suffered a so plug, whilst W. Cooper (Bradbury) punctured. There a halt at Corcutt's Garage, Doncaster, for replenishm and many seized the opportunity of overhauling their machi Mrs. Wade was not contented with the running of her S for the engine seemed to have no life despite a chang plugs and magneto contact breaker. She stopped twice be Gainsborough in an endeavour to remedy matters, and half inclined to retire when we left her. There were cases of exhaust valve breakage in the Lincolnshire area

The wind which had caused so much discomfort on outward run had dropped on Monday, rendering the r real delight.

Lunch was partaken of at Sleaford, and being market there were great crowds at the hotel, which hindered the petitors from starting. A couple of miles from Sleafo steam roller was at work, and unfortunately H. C. fell over on the rough stones, breaking his exhaust In Peterborough we came across Mrs. Cooke, who had covered a fractured tube on her machine, but, neverthe managed to finish on time. Captain Seymour puncture Biggleswade, and W. Cooper, Good Samaritan like, ha over his spare tube and inflator and rode to Hatfield w out them. The interest was sustained throughout the and in Biggleswade several policemen had to keep curious sightseers from swarming round the ladies. T was a check one mile from the town, and the last one a from Hatfield. Mrs. Wade (Scott) had not arrived at finishing point at 8 p.m. on Monday, nor had S. B. W (Wanderer). G. H. Hollis (Douglas) retired.

The official results will appear next week.

THE 1911 RICHMOND MEET.

ONCE again the motor cyclists of the North of England were favoured with glorious weather for their annual meet at the charming little town of Richmond, Yorkshire, this year being the fourth time that this place has been chosen as the rendezvous. Hitherto the meet has been organised by the hon. secretary of the Middlesbrough M.C.C., but as the Middlesbrough M.C.C. is now part of the Northern League of Motor Cyclists the task of organising the event devolves upon the League. The fact of this being the first meet under the new arrangement, coupled with the summer-like weather, probably accounted for the gathering being a record one. From 11 a.m. to 1 p.m. on Friday last there was a constant stream of motor cyclists into Richmond from all parts of the country. At the dinner hour it was estimated that over 400 machines were parked in the spacious old Market Place.

This year it was found practicable for the first time, thanks to the efforts of the energetic president of the meet, Mr. T. Bullus, of Bradford, to guarantee a sufficient number of dinner tickets to enable the riders to take lunch together in the Town Hall, and, therefore, 130 visitors sat down to a good repast, the clubs which had sent contingents and secured tickets being as follows: Leeds 25, Middlesbrough 20, Sunderland 20, Bradford 18, Hull (South Riding) 16, York County 9, Ilkley 7, Ripon 4, Doncaster 4, Pontefract 4, Bridlington 3, Scarborough 6, and Hartlepool 12.

Presentation of Prizes.

After lunch the Mayor of Richmond (Councillor A. Currie) was introduced to the company by the chairman of the League, Mr. J. R. Kelly, of Leeds, who said that Mr. Currie had kindly consented to present the prizes of the Northern League won during the year 1910 and also those won during the morning in a speed-judging contest held on the Reeth Road. In his opening remarks the Mayor extended a hearty welcome to the visitors, and said that he had not yet gone so far as to ride a motor cycle, but after seeing that so many ladies had come to the meet in sidecars and also one on her own motor cycle, he thought that he might do far worse than begin to take lessons. Mr. Currie then presented the prizes as follows: The gold medals for the Garrowby hill-climb, and the bronze medals and prizes won at the Harrogate team trials, the speed-judging trials being won by (1) W. A. Birchall (Doncaster M.C.C.), (2) T. W. Picken (York), and (3) W. Fawcett (Harrogate).

After this ceremony was over, Mr. Brook, of Harrogate, was elected chairman of the meet for 1912, on the motion of Mr. J. R. Kelly, seconded by Mr. Dent (York).

The A.C.U. and the Northern League.

Before the company separated Mr. Bullus (Bradford) asked to be allowed to make a few remarks on the respective positions of the Northern League and the A.C.U.

Mr. Bullus explained that these bodies were working at present separately and apart, and said he hoped that in the near future all differences between them would be amicably settled. On the question of the suspension of riders who competed in Northern League events from entering A.C.U. competitions, he had been hoping that a reconciliation might have been effected before the opening of the present season. He did not think that the A.C.U. was strong enough to deal with the question effectively, nor was the League able to settle the question in a satisfactory manner, because the League, having to rely on its officials being drawn from existing clubs, they had not the time to spend on the matter that was necessary. He could not see that the difficulties would be settled at an early date. The League must go on, and there was no reason, so long as sufficient support was forthcoming, why it should not grow into a very big organisation. If it were to fall through at the present time it would have already justified its existence, for there was no doubt that it was due to the formation of the Northern League that the A.C.U. had brought its prominent trials and hill-climbs into the North, and it was a great pity that there should be a split in the camp.

The monster meet of motor cyclists in Yorkshire. Some of the machines parked in the Market Square, Richmond.

The 1911 Richmond Meet.—

A group of motor cyclists assembled round the Market Cross, Richmond, on Good Friday, on the occasion of the annual meet. Among the clubs which took part were Leeds, Middlesbrough, Sunderland, Bradford, Hull and E. Riding, York County, Ilkley, Ripon, Doncaster, Pontefract, Pocklington, Scarborough, and Hartlepool.

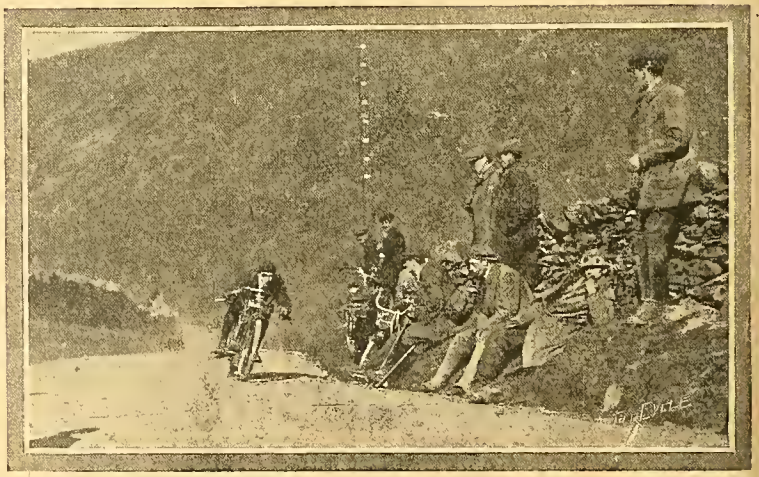
After the meeting had been declared closed by the Chairman and a vote of thanks passed to the Mayor of Richmond for kindly presiding, the company proceeded to the Market Cross to be photographed. Overalls and goggles were then donned, and the participants returned to their various destinations.

KIRKSTONE PASS HILL CLIMB.

THE hill-climbing competition on Kirkstone Pass, organised by the Cumberland County M.C.C. in conjunction with the West Lancashire and Westmorland Clubs, was held on Good Friday, and proved a very successful event. There were two classes, one for single-cylinder machines and the other for twin-cylinders, over forty entries being received in the two classes, including Hugh Gibson (T.T. Triumph), Capt. Gregson (9 h.p. Bat), and P. E. Tolfree, who rode his Matchless from Edinburgh to compete.

The single-cylinder class was run off first, but considerable difficulty was experienced in getting the men up the hill owing to the heavy holiday motor traffic, which will render it impossible to organise another such event on Kirkstone at holiday time. A start was made at 2 p.m. prompt, but it was about 5.30 p.m. before the last man out of the twenty-three competitors who had entered crossed the tape.

The feature of the single-cylinder class was a splendid ascent by Hugh Gibson in 1m. 34⅗s. on a T.T. Triumph, and he was closely followed by Jack Braithwaite in 1m. 42⅖s. on a 3½ h.p. T.T. Braithwaite. In the twin-cylinder class Capt. Gregson (Bat) came up in magnificent style in 1m. 34⅖s.—fastest time of the day.



J. Braithwaite (3½ h.p. T.T. Braithwaite), who made second fastest time in Class I. at the Kirkstone Pass hill climb, about to cross the tape. Hugh Gibson was the winner on a T.T. Triumph in 1m. 34 3-5s.

CLASS I.—Single cylinders.

	Rider and Machine.	M.	S.	Formula.
1.	Hugh Gibson (T.T. Triumph) ...	1	34⅗	... 14.7
2.	J. Braithwaite (T.T. Braithwaite) ...	1	42⅖	... 15.3
3.	E. M. Gregson (T.T. Triumph) ...	1	52	... 16.4
4.	P. E. Tolfree (Matchless)	2	8⅖	... 16.4
5.	J. M. Somervell (Triumph)	1	55	... 16.9
6.	Hal Harrison (Rudge)	1	56⅗	... 17.0
7.	R. Drinkall (Rex)	1	59⅗	... 17.2
8.	Lionel Pierce (J.A.P.)	1	59⅘	... 17.6
9.	Joseph Thompson (Triumph) ...	2	3⅕	... 17.6
10.	J. W. Moffet (Triumph)	2	14⅘	... 18.5
11.	R. Holford Jones (Triumph) ...	2	26⅘	... 19.8

CLASS I.—Single cylinders (continued).

	Rider and Machine.	M.	S.	Formula.
12.	J. S. Whitelock (Bradbury)	2	13⅕	... 20.8
13.	R. Barton (Triumph)	2	26⅕	... 21.3

CLASS II.—Twin cylinders.

1.	R. C. Shaw (Scott)	2	3⅕	... 17.5
2.	J. H. Shaw (Scott)	2	24	... 19.2
3.	Captain Gregson (Bat)	1	34⅖	... 21.6
4.	W. Rogers (Scott)	2	55	... 21.9
5.	Cecil Sykes (Scott)	2	39⅗	... 23.0
6.	Edward B. West (Bat)	1	52⅘	... 25.5
7.	L. S. Parker (Scott)	3	10⅘	... 26.2
8.	E. W. Illingworth (Scott)	3	0	... 26.5

M.C.C. JARROTT CUP COMPETITION

London—Lands End and Back

THE fourth annual competition for the Jarrott cup took place on Saturday and Monday last over the course from London to Land's End and back. This year, however, a slight alteration was made in the route so as to include the hilly road between Exeter and Liskeard and the difficult passage of Dartmoor; the competition attracted a much larger number of entrants. On the occasion of the start of the Jarrott cup competition the wide road outside the Bridge House Hotel, Staines, was hardly that peaceful and quiet place it would be expected to be at 3 a.m. The first man was due away at 3.48, and for some time before that hour competitors and not a few spectators filled the roadway, and lit up the immediate surroundings with the light of their lamps. The morning was absolutely perfect. There was no wind, and the full moon shone brightly. There were, however, a few patches of mist, which were, happily, not thick enough to worry the competitors to any great extent.

A flashlight impression at Staines at the start of the London - Land's - End run, 3.50 a.m. Saturday last. Mr. F. T. Bidlake, the timekeeper, is about to start L. A. Baddeley (3½ h.p. Brown). On the left the three competitors who are to start later are A. T. Stanton, S. Wright, and J. S. Holroyd.

List of Starters.

Vedy (5 Salway)
de Foubert (3½ Triumph)
W. Douglas (2¾ Douglas)
Phillips (2¾ Douglas)
Gwynne (3½ Triumph)
Olsson (8 Oxted-Jap)
Karslake (4 Dreadnought)
M. C. Scott (3½ Rudge)
O. Babbington (3½ J.A.P.)
Pratt (3½ P. and M.)
W. H. Elce (5 Rex)
H. W. Turner (3½ Triumph)
G. Lee-Evans (7 Indian)
L. A. Baddeley (3½ Brown)
D. S. Baddeley (7 Indian)
J. R. Haswell (3½ Triumph)
A. G. Peppercorn (3½ Bradbury)
R. Knowles (6 Matchless-Jap)
R. C. O. Wells (3½ Bradbury)
W. E. S. May (3½ Bradbury)
J. S. Holroyd (2½ Motosacoche)
F. B. Webber (3½ Scott)
A. T. Stanton (3½ Bradbury)
A. C. Robbins (3½ Humber)
S. C. Perryman (3½ Ariel)
H. J. Cox (2¾ Forward)
A. J. Sproston (3½ Rudge)
S. G. Frost (4½ Minerva)
G. T. Gray (3½ Rudge)
B. A. Hill (3½ Rudge)
Eli Clark (2¾ Douglas)
W. B. Gibb (2¾ Douglas)
F. W. Wasley (2¾ Douglas)
P. Grout (2¾ Douglas)
P. G. E. James (3½ J.A.P.)
E. Kickham (2¾ Douglas)
F. C. Bailey (3½ Clyde)
F. C. Poecher (3½ Triumph)
F. E. Pither (5 Rex)
C. L. Odell (3½ Brown)
C Sergeant (3½ Brown)
R. G. Mundy (3½ Triumph)
A. Moorhouse (7 Indian)
G. Griffith (2¾ Moto-Rêve)
J. P. Le Grand (3½ Triumph)
C. Percival (6 Zenith and sidecar)
A. H. Forbes (3½ Triumph)
W. C. Hemy (3 Wanderer)
A. Brittain (3½ Bradbury)
C. S. Burney (3½ Rudge)
G. Brough (3½ Brough)
J. W. Cox (3½ Brough)
A. Webster (2½ Hobart)
S. Wright (3½ Humber)
F. W. Applebee (3½ N.S.U.)
G. G. C. Pigott (6 Zenith-Gradua)
R. Ellis (3½ Calthorpe)
W. A. Jacobs (3½ Bradbury)
F. Thomas (7 G.O.K. sc.)
J. Chater-Lea (8 Chater-Lea and sc.)
E. B. Ware (8 Chater-Lea and sc.)
J. L. Love (7 Rex sc.)
Frank Smith (5-6 Clyno and sc.)
A. G. Leck (3½ Rex sc.)
C. F. Halsall (5-6 Clyno and sc.)
J. W. Woodhouse (2½ New Hudson)
O. Cooke (3½ Triumph)
A. J. Stevens (2½ A.J.S.)
J. Stevens (2½ A.J.S.)

M.C.C. Jarrott Cup Competition.—

Only Mussell, Stanley Webb, Sudfeldt, and Patteson failed to turn up out of an entry of seventy-three. Mussell was No. 1, so the honour of starting first fell to that splendid veteran rider, Vedy, who was riding for the first time a 5 h.p. Salway. Bidlake, the well-known M.C.C. timekeeper, assisted by Bray, started the men, several of whom through insufficient accommodation at the hotel, had had no sleep.

We left Staines with the vanguard, and after Egham the first glimmer of dawn showed in the east, and it was grand indeed to watch the black sky of night gradually turn to dark blue, and then assume its normal colour. Every one seemed to be going well, Baddeley's Indian taking Egham Hill with splendid regularity at a slow speed. At Basingstoke we overtook Vedy, who had stopped his engine just after leaving Staines, and rapidly pushing ahead we came upon the first check. Near Whitchurch, on Salisbury Plain, we halted, and saw the leading men cross the fine open country. Vedy's engine did not appear to be running its best, and at Salisbury he retired.

The morning was bitterly cold, and much fog was encountered before Salisbury was reached. Babbington came up with his tank filler cap covered with hoar-frost. Pratt arrived looking as cheerful as ever, but mistook some spectators on the Plain for a check and halted.

A sharp corner between Salisbury and Shaftesbury. The rider is E. Kickham (2¾ h.p. Douglas).

Almost immediately after the start the roads became loose, and many of the competitors suffered tyre trouble on several occasions to such an extent that retirements were enforced. The route was easy enough to Chard, but Chard Hill proved a source of interest. However, Douglas and his companion Phillips took it in splendid style. It was near here that Gwynne unknowingly provided an exciting incident. He passed a horse and cart, the former shying. After he had got by, the horse and trap parted company, and the tractive portion of the combination careered down hill, narrowly missing Pratt, who was just behind. Then it escaped the official car —a 15 h.p. Napier driven by Bray, and kindly placed at the disposal of the club by its president, Mr. Charles Jarrott —by a hair's breadth. What happened afterwards is lost in mystery.

The Check on Yarcombe Hill.

Yarcombe Hill was next reached, which has an awkward corner at the foot, causing many of the competitors' engines to knock in no uncertain tones. It was, however, but a gentle foretaste of what was to come after lunch. On the top of the hill the competitors came unexpectedly upon a check, in charge of which were Messrs. Head, Jenkins, and Dr. Gibbons. Previous to this we had come through Yeovil, where special arrangements had been made to dole out petrol to the competitors, and here such well-known people as Wells, Hooydonk, Fry, and Dickson were to be seen all on the club's Easter tour, and doing their best to help their harder worked brethren. Dickson, mounted on a powerful Indian, hurried ahead to take charge of the timing of the men in Cornwall.

Near Honiton, and all the way thence to Exeter, numerous herds of cattle and flocks of sheep were encountered, and people with free engines and change-speed gears blessed these contrivances. It was quite instructive to see how neatly Douglas negotiated a flock of sheep without dismounting. After lunch at the Bude Hotel, Exeter, the trial proper began. Mr. Scott described the route in our issue of April 6th, and we cannot accuse him of exaggeration. Two miles from Exeter a long steep hill was encountered—one of many that were negotiated. Coming as it did after lunch, when the men were tired and over half the distance had been covered, this difficult section was especially trying. It was a real test, and taken as a whole the machines performed remarkably well.

Over Dartmoor.

The run over Dartmoor was exceptionally fine, the landscape being glorious in its colouring, the effect of which was heightened by a lovely day; but the roads were terribly loose. The steep descents to Two Bridges needed great care and thereafter came a long stiff climb, up which Gwynne, Pratt, Olsson, and others in the van made excellent performances. The famous Dartmoor Prison was seen on the left.

There was a long run down to Tavistock, followed by more climbing, and then a descent into Gunnislake, which is rather prettily situated on the Tamar, the river which defines the boundary between Devon and Cornwall. One turns to the left at the end of the bridge, and thereafter there is an ascent of no mean severity of nearly two miles said to be the worst hill on the route. The ascent to Moreton Hampstead had been bad enough, but this was not to be compared to it, and a large crowd assembled near the summit to see the fun.

Some observations on the performances of a number of the competitors may be of interest. Karslake (on his fine old stager Dreadnought), Pratt (P. and M.), Evans (Indian), Elce (Rex), Peppercorn (Bradbury), R. C. O. Wells (Bradbury), L. A. Baddeley (3½ h.p. Brown), Frost (a former Jarrott Cup winner, 4½ h.p. Minerva), Gibb (2¾ h.p. Douglas), Gray and Hill (Rudge-Whitworths), Brough (3½ h.p. Brough), Robbins (3½ h.p. Humber), Moorhouse (3½ h.p. Indian), James (3½ h.p. J.A.P.), D. S. Baddeley (3½ h.p. Indian), and Wasley (2¾ h.p. Douglas) all came up in good form. Of these, however, Evans, Elce, Gwynne, Frost, Gibb, Brough, and Moorhouse seemed to shine above their fellow-competitors. Other climbs followed, but they were of minor importance. Haswell, Cox, and Kickham had to pedal, while Babbington was forced to dismount. The sun was now lower in the heavens, and shone with full glare into the eyes of the men travelling westwards.

The roads were gritty and loose, while a strong westerly wind had sprung up, and in addition many Cornish towns and villages with narrow streets had to be traversed. Callington and Liskeard were passed, and then Lostwithiel, in which town was a level-crossing, where many men were delayed owing to the passing of a fish train. After the steep ascent out of the town a check, in charge of Dickson, was discovered, at which several competitors arrived late owing to being kept waiting by the train. In the narrow streets of St. Austell a traction engine pulling four circus waggons held up the whole traffic for several minutes, and prevented Sproston from passing.

The Cornish Sportsmen.

The journey was now nearly over, and a pretty glimpse was obtained of St. Austell Bay. Truro was then negotiated, and after that Redruth, the steep, narrow street of which was thronged with people. The Cornishmen are good sportsmen, and turned out in their hundreds to see the competitors. Penzance was ultimately reached, and there yet remained the twenty miles to Land's End and back. Part of the road was, as usual, very gritty, and not a few had punctures.

On the last stage the following qualified for the return journey: W. Douglas (2¾ h.p. Douglas), P. Phillips (2¾ h.p. Douglas), E. Gwynne (3½ h.p. Triumph), V. Olsson (8 h.p. Oxted-Jap), H. Karslake (4 h.p. Dreadnought), E. O. Babbington (3½ h.p. J.A.P.), W. Pratt (3½ h.p. P. and M.), S. G. Frost (4½ h.p. Minerva), W. H. Elce (5 h.p. Rex), C. Lee-Evans (7 h.p. Indian), L. A. Baddeley (3½ h.p. Brown), D. S. Baddeley (7 h.p. Indian), J. R. Haswell (3½ h.p. Triumph), A. G. Peppercorn (3½ h.p. Bradbury), R. C. O. Wells (3½ h.p. Bradbury), A. T. Stanton (3½ h.p. Bradbury), A. C. Robbins (3½ h.p. Humber), S. C. Perryman (3½ h.p. Ariel), A. J. Sproston (3½ h.p. Rudge), G. T. Gray (3½ h.p.

M.C.C. Jarrott Cup Competition.—

The first six arrivals at Land's End on Saturday evening. Left to right: Pratt, Karslake, Gray, Phillips, Douglas and Olsson.

Rudge-Whitworth), B. A. Hill (3½ h.p. Rudge-Whitworth), W. B. Gibb (2¾ h.p. Douglas), E. Clark (2¾ h.p. Douglas), A. H. Forbes (3½ h.p. Triumph), A. W. Brittain (3½ h.p. Bradbury), G. Brough (3½ h.p. Brough), A. Webster (2¼ h.p. Hobart), S. Wright (3½ h.p. Humber), F. W. Applebee (3½ h.p. N.S.U.), P. G. E. James (3½ h.p. J.A.P.), E. Kickham (2¾ h.p. Douglas), F. C. Poecher (3½ h.p. Triumph), A. Moorhouse (7 h.p. Indian), and J. W. Woodhouse (2½ h.p. New Hudson).

Of road incidents there were many. Scott (Rudge-Whitworth) had trouble at the start; Holroyd (Motosacoche) finished, but owing to valve trouble was unable to return. Burney (Rudge-Whitworth) had a puncture in the last section; Ellis (Calthorpe) had timing gear trouble, and broke his handle-bar in Truro. A. J. Stevens (A.J.S.) had ten punctures before the first control, and his brother also retired through tyre troubles at Tavistock. D. S. Baddeley smashed the lubrication inspection glass in his crank case, and replaced it with a two shilling piece and a leather washer. Chater-Lea (Chater-Lea and sidecar) lost his way in Exeter and arrived late. Ware, similarly mounted, had much tyre trouble; Griffith (1½ h.p. Moto-Rêve) had a puncture shortly after starting and an accident in Truro. Mundy (3½ h.p. Triumph) had just time to finish the last section, but had a puncture near Callington. This rider had no sleep for two nights, as he had been to Coventry to fetch his new machine. Philip Grout and F. C. Wasley, of the Bristol Motor Club (2¾ h.p. Douglas), were also victims to the puncture fiend.

Smith (Clyno) broke the high-speed chain of his machine between Penzance and Land's End, and completed the journey on the low gear, arriving thirteen minutes late.

The Return Journey.

Dawn was just breaking when F. T. Bidlake despatched the first man from Penzance on Easter Monday at five o'clock. It was not very cold, but inclined to be misty, and cold and fog increased as the men travelled eastwards. The fog was not, however, sufficiently thick to hamper the competitors seriously. All the arrivals of the previous night started except Webster, the Hobart rider. Chater Lea arrived to time on Saturday evening, but was not timed in owing to putting his machine in the wrong garage.

To return to the journey, the sun dispersed the fog at Gunnislake, and thereafter the men travelled homewards in glorious weather, and with a following wind. The first check was at Lostwithiel, in charge of E. B. Dickson, who told us that A. M. C. Scott retired at Basingstoke. He took a corner too fast, and allowed his machine to run into a wall, but flung himself clear, and got off unscathed. The machine was repaired in time for him to appear later in the day near Chard.

At Two Bridges we saw several of the men negotiate the short but rather awkward hill, just after the long Merrivale climb from Tavistock, with little chance of cooling. Here we were informed that Pither had seized his engine the night before, and Pratt, Moorhouse, and L. A. Baddeley had worked all night putting it in order again. Gwynne,

Another group of Jarrott Cup competitors outside the Land's End Hotel.

M.C.C. Jarrott Cup Competition.—

Pratt, Haswell, Karslake, Elce, D. S. Baddeley, Kickham, James, Douglas, Poecher, Gray, Phillips. S. Wright, Moorhouse, Hill, Burney, Woodhouse, Chater-Lea, and Smith all went up the hill in good form, but Forbes pedalled, and R. C. O. Wells managed the climb somewhat awkwardly.

The next check was at Moreton Hampstead. At Exeter, where lunch was served, news of many punctures came to hand, Moorhouse, Burney, and Hill being among those who suffered in this respect. We had several opportunities of seeing the excellent hill-climbing powers of the Clyno and sidecar, which were above reproach.

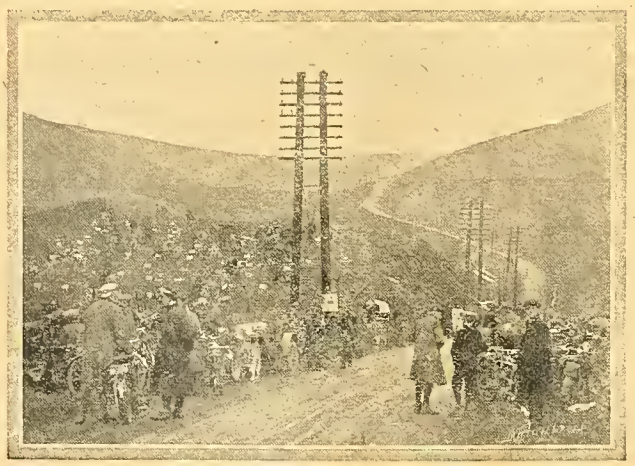
The check at Chard was in charge of Messrs. Head, S. H. Fry, and Dr. Gibbons. Moorhouse was frequently seen mending tyres, while belts seemed to be Applebee's chief trouble. Punctures and minor adjustments seemed to be the only troubles on the return journey, and genuine breakdowns were unknown. The finish was just outside Hounslow tram terminus, those officiating at this point being Messrs. F. T. Bidlake, F. J. Jenkins, and Dr. Gibbons. Those who completed both journeys were: W. W. Douglas (2¾ h.p. Douglas), P. Phillips (2¾ h.p. Douglas), E. Gwynne (3½ h.p. Triumph), V. Olsson (8 h.p. Oxted-Jap), H. Karslake (4 h.p. Dreadnought), E. O. Babbington (3½ h.p. J.A.P.), W. Pratt (3½ h.p. P. and M.), W. H. Elce (5 h.p. Rex), G. Lee-Evans (7 h.p. Indian), L. A. Baddeley (3½ h.p. Brown), D. S. Baddeley (7 h.p. Indian), J. R. Haswell (3½ h.p. Triumph), A. G. Peppercorn (3½ h.p. Bradbury), R. C. O. Wells (3½ h.p. Bradbury), A. T. Stanton (3½ h.p. Bradbury), A. C. Robbins (3½ h.p. Humber), S. C. Perryman (3½ h.p. Ariel), A. J. Sproston (3½ h.p. Rudge), S. G. Frost (4½ h.p. Minerva), G. T. Gray (3½ h.p. Rudge), B. A. Hill (3½ h.p. Rudge), W. B. Gibb (2¾ h.p. Douglas), Eli Clark (2¾ h.p. Douglas), A. H. Forbes (3½ h.p. Triumph), A. W. Brittain (3½ h.p. Bradbury), C. S. Burney (3½ h.p. Rudge), G. Brough (3½ h.p. Brough), S. Wright (3½ h.p. Humber), F. W. Applebee (3½ h.p. N.S.U.), P. Grout (2¾ h.p. Douglas), P. G. E. James (3½ h.p. J.A.P.). E. Kickham (2¾ h.p. Douglas), F. C. Poecher (3½ h.p. Triumph), A. Moorhouse (7 h.p. Indian), Frank Smith (5-6 h.p. Clyno and sidecar), J. W. Woodhouse (2¼ h.p. New Hudson), and A. J. Stevens (2½ h.p. A.J.S.)

All who started in the morning arrived at Hounslow except Chater-Lea, who at 8.45 had not put in an appearance. Thomas on the G.O.K., who was unaccounted for in our previous report, was put out of the running by a car at Tavistock.

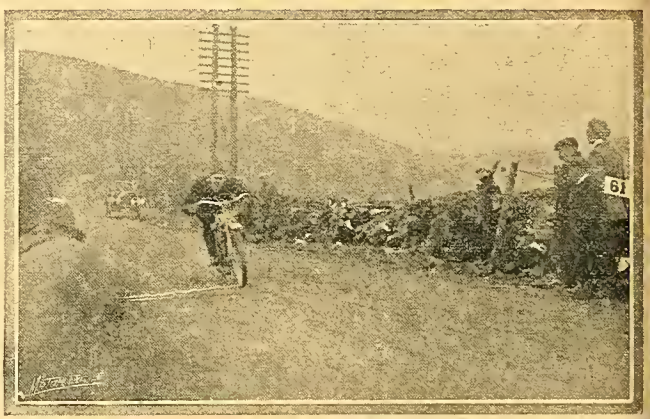
THE SHAP FELL OPEN HILL-CLIMB.

An entry of 115 was secured for this event, and the first man was off promptly at 1 p.m., and the whole 115 were got away and finished by 5.30. Further results will be published next week, but the fastest time of the day was a tie between E. W. Sharpe and Capt. Gregson, Southport, who finished the 1¼ miles in 84s. Both rode 9 h.p. Bat-Japs, and beat the redoubtable H. D. Shaw, from Bradford, by four seconds. There were no accidents during the competition, though Hugh Gibson (Southport), while practising, was rather badly spilled by a rider coming down on his wrong side, but he managed to get his machine repaired, and will probably be found amongst the winners. Several competitors were objected to by the official judge, Mr. H. G. Cove, for having only one brake and carrying lead weights. F. W. Barnes (6 h.p. Zenith) seemed to go up very fast, and probably had he not had to cut-out for a car that got in his way might have made about the fastest time. It seems a great pity that car owners and motor cyclists have so little consideration for those holding a sporting competition, and by obstructing the course make it awkward to ascend the hill at fast speed. The fastest single-cylinder machines were W. F. Newsome (3½ h.p. Triumph), 90s.; — Westwood (3½ h.p. Triumph), 92s.; S. Crawley (3½ h.p. Triumph), 92s. Riders of Humber lightweight motor cycles were placed first, second, and third in the lightweight class.

Shap Fell is an excellent test for a touring mount, but the steepness of the gradient cannot be compared with some of the better known test hills such as Birdlip, Porlock, Sutton Bank, or even Kop Hill, Princes Risborough.



General view at the start of the Shap Fell open hill-climb. The competitors' machines are parked in the field on the left.



Capt. W. A. Gregson (9 h.p. Bat-Jap) who tied for fastest time in the Shap Fell hill-climb with E. W. Sharpe.

TORBAY CLUB'S RELIABILITY TRIAL.

On Good Friday a 200 miles reliability run was arranged by the Torbay and District Motor Cycle Club to Truro and back, *via* Bovey, returning *via* St. Austell to the starting point—Torquay. There were twelve entries, but only six started—A. Powell (2¾ h.p. Enfield), H. Benny (3½ h.p. Premier), W. L. Bowden (3½ h.p. Triumph) H. S. Watson (4 h.p. Bat-Jap), T. J. Taylor (5 h.p. Indian), and B. Rowe (3½ h.p. Triumph). The riders were started at two minute intervals, the first man starting at eight o'clock. Ninety minutes were allowed for lunch at Truro. The course had to be completed in eleven hours and ten minutes. Gold, silver, and bronze medals were offered, Mr. N. Stewart (a vice-president) presenting, in addition to the first prize, a handsome silver cigarette case.

The result was: 1, A. Powell, 51 marks lost; 2, T. J. Taylor, 96; 3, W. L. Bowden, 100¾.

FRENCH ROAD RACE.

The Marseilles to Nice motor cycle race took place on the 16th inst. Fifty-six competitors started at 6 a.m. The course at Cannes was thronged with spectators, the first competitor passing through that town at 8.3 a.m.

The results were:

Class 1 (heavy weights).—1st, 9 h.p. René Gillet. Time. 2h. 5?s.

Class 2 (medium weights).—1, Magnat-Debon. 3h. 18m. 57s.

Class 3 (lightweights).—1, Lehman (Motosacoche). 4h. 11m. 24s.

BROOKLANDS EASTER MEETING.

e second 65 miles per hour handicap. Competitors in the paddock.

LTHOUGH it was marred by a deplorable accident in one of the car events, the race meeting held at Brooklands on Easter Monday was quite the largest and otherwise the most successful meeting which track has ever seen. Thanks to a fine programme of its, no less than nine in number, to the prospect of e good flying, and to a specially fine sample of Brookls weather, there was an enormous crowd present, estied by the officials at as many as 16,000.

here were two motor cycle events in the programme, cly, the second 65 m.p.h. motor cycle handicap (winner eceive £10, second £5, and third £3) for machines whose rved speeds have not exceeded 65 m.p.h. for a flying lap, the fourth 70 m.p.h. motor cycle handicap, prizes similar alue to the previous event and for machines governed r similar conditions. In common with all similar events h figure on Brooklands programmes, both races proed fine fields, there being twenty-eight riders (thirtye entries) in the first race and sixteen riders (twenty-one ies) in the second.

A Notable Absentee.

the first race Godfrey, who would have been quite one e favourites, was a notable absentee, owing to his having red the engine sprocket of his 5 h.p. Indian, which, with ton's Bat and W. D. Johnstone's Matchless, was put the scratch mark. For once in a way the Collier wd" were not amongst the ruck, "H. A." getting 16s. on his 580 c.c. machine, and "C. R." 42s. on his 488 ingle, whilst Colver got 1m. 42s. for a 76 mm. × 64 mm. e Matchless. Other entrants included Surridge, Ommaand Gibson on Rudges, McNab, Stewart, and Bakere on Trump-Japs, Gray, Stocks, Duvar, Roy Walker, ord, and Gaskell on Triumphs, and Fowles and Dayrell Martins.

ach on a 76 mm. by 76 mm. single-cylinder Minerva 4s. handicap) was first away, and was shortly followed veritable cloud of middleweights with handicaps rangrom 42s. to 56s., and mostly with machines approachhe 500 c.c. mark. These, however, soon sorted themout, and although the distance of the race was only les, the usual procession was quickly formed. Dr. H. askell, whose clutch Triumph showed a fine turn of , and who had the liberal handicap allowance of 10s., soon established a commanding lead, and eventuromped in first past the post by at least half a mile. rtunately for him, he was disqualified for going only ap, which was undoubtedly an error on his part. The was that the winners were declared to be V. Wilberforce, 76 mm. by 65½ mm. N.L.C. (1m. 50s.), who came in about 100 yards ahead of H. A. Collier, two-cylinder 76 mm. by 64 mm. Matchless, third being F. A. McNab, 85½ mm. by 85 mm. Trump-Jap (48s. start). Dr. Gaskell's mistake was particularly unfortunate for him, as he had such an excellent lead of the remainder of the field, that he would have stood a very good chance of winning had he completed the full distance. His machine was a free engine Triumph, stripped of mudguards and other impedimenta.

During the second lap J. Fowles, on a Martin 85½ mm. by 60 mm., started a wobble on the rough part of the track that lies between the members' bridge and the bridge over the Wey, and came a nasty cropper, fortunately escaping with nothing worse than scraped hands, torn clothes, and a shaking. Fourth, fifth, and sixth places were taken by Colver, 76 mm. by 64 mm. Matchless (1m. 42s.), Ommaney, 85 mm. by 88 mm. Rudge (46s.), and Brunton, 85 mm. by 65 mm. Bat (scratch).

The winner's speed was 53½ miles per hour.

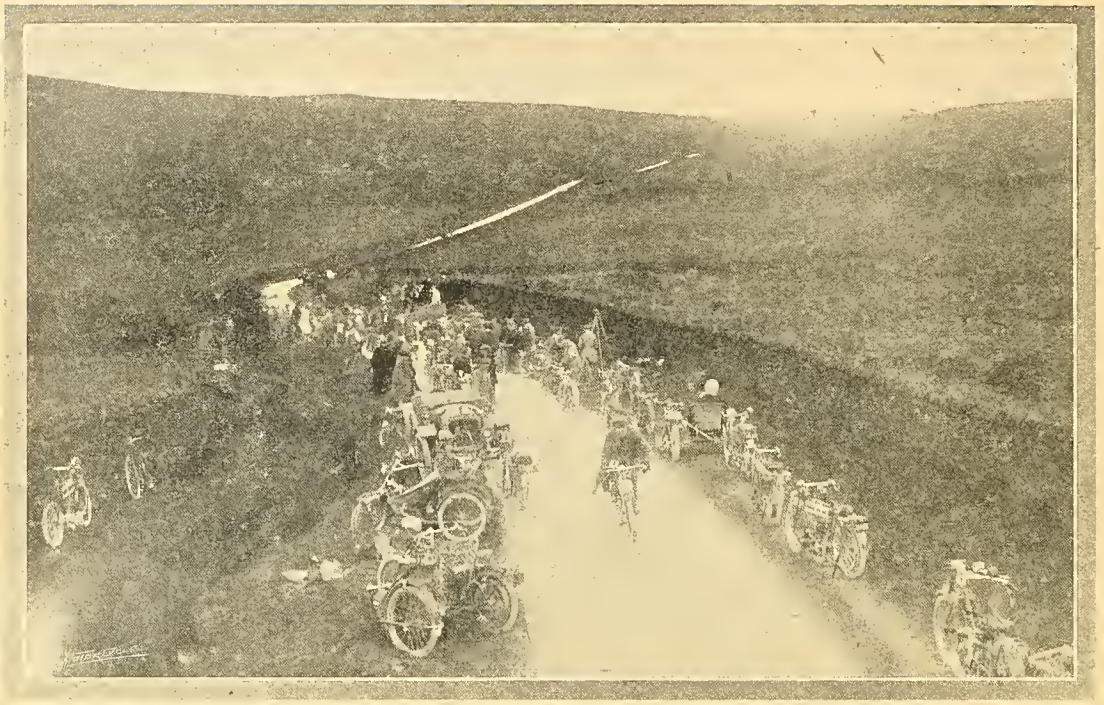
The 70 m.p.h. Handicap.

This race over a distance of 8½ miles produced some fine sport, especially an exciting tussle between C. R. Collier, who was in receipt of 3s. start, and O. C. Godfrey, who was the sole scratch man, the machines respectively being an 85½ mm. by 85 mm. twin Matchless, and an 82½ mm. by 93 mm. twin Indian. This was a regular hammer and tongs affair from start to finish, the riders finishing in practically exactly the same positions as they started, although during the race the gap between the riders had alternately narrowed and widened. The field included the Bros. Collier, Colver, Johnson and Johnstone (Matchless), Surridge, Ommaney, and Gibson (Rudge), Baker White, Stewart, and McNab (Trump-Japs), Taylor (Indian), Roy Walker (N.L.C.), E. D. Tate (Triumph), and Fowler (Bat).

The winner proved to be Harry Collier, who rode splendidly on his 580 c.c. 76 mm. by 64 mm. twin Matchless (1m. 15s.); second, very close up to the winner, F. A. McNab, 85½ mm. by 85 mm. Trump-Jap (2m. 3s.); third, C. R. Collier, and fourth O. C. Godfrey.

Colver's 85½ mm. by 85 mm. twin Matchless was, we noted, fitted with coil and accumulator ignition.

We have already mentioned that the car events produced an accident, and as this was due to a cause which has not



The hill near Bolton Abbey, on Halton Moo used in the North v. South competition last Saturday afternoon.

been entirely absent in some of the motor cycle events we have witnessed at Brooklands it provides a lesson which cannot be too closely taken to heart by all who use the track. In the 100 m.p.h. Handicap, G. Williamson, driving a 27.3 h.p. Benz, put up a fine race with another car, and in the keenness of the tussle prolonged it beyond the finishing line, which he passed at a speed of about 96 miles per hour. The result was that his speed was scarcely perceptibly reduced when he reached the turn to come back to the paddock, and in consequence he ran directly right up the banking, shot up into the air at least twenty feet, and crashed through the trees something like a hundred feet beyond the edge of the track. The car was, of course, smashed to pieces and the driver extremely seriously injured, if not actually fatally. This is the second accident of the same kind that has occurred, and it emphasis the paramount necessity for every competitor to adhere the cardinal rule of slowing up directly the finishing li is passed. One cannot but feel that in this distressi case the brakes must have failed to act, the throt jammed or something else gone amiss, but to all appe ances it cannot be denied that it seemed purely the res of over-keenness. These occurrences are lessons dea bought by life and limb, and the best that can be ma of them by *habitués* of Brooklands is to profit as much possible from them.

During the afternoon some fine flying, in spite of a gus wind, was indulged in by Mr. Pixton on a Roe bipla the machine accomplishing a total flight of about an h and a half.

Members of the combined clubs in the Herts. County A.C. inter-team tour to Harrogate at Easter.

THE STAXTON HILL-CLIMB.

Splendid weather prevailed on Monday afternoon last at arborough when the above annual event was run off as open competition, under the rules of the Northern League Motor Cyclists.

Although other attractions had caused a rather small entry, endid sport was indulged in to the great delight of the at number of motor cyclists present at the climb. The twins caused quite a sensation at the noted corner.

RESULT OF SINGLE-CYLINDER CLASS.

Rider and Machine.	Date.	Time. secs.	Fig. of merit.
T. W. B. Durant (3½ J.A.P.) ...	1909 ...	46⅖ ...	611
G. H. Cockcroft (3½ Triumph) ...	1911 ...	47⅗ ...	645
J. Dale (3½ Rudge)	1911 ...	47⅕ ...	680
J. A. Tindall (3½ Triumph) ...	1907 ...	49⅕ ...	699
S. H. Clay (3½ Triumph) ...	1911 ...	51 ...	706
H. W. Fortune (2½ New Hudson)	1911 ...	71⅕	715
TWIN CYLINDERS.			
V. Gash (6 B.G.-Jap)	— ...	38⅖ ...	801
J. J. Cookson (8 Matchless) ...	1910 ...	39⅙ ...	897
G. W. MacIlwaine (8 Matchless)	— ...	46⅖ ...	1025
J. H. Grindell (8 Matchless) ...	1911 ...	48⅕ ...	1127
J. Mackay (5-T.T. Rex) ...	1911 ...	43⅕ ...	1166
A. Sollitt (5 Scott)	1910 ...	49⅖ ...	1714

FINAL RESULT.

The twin had to give the single 8 secs. start.

WINNER OF TRANMER CUP.

1. T. W. B. Durant (3½ J.A.P.) ... ... 46½s.
2. V. Gash (6 B.G.-Jap) ... ... 40s.

The starting point in the Scarborough M.C. hill-climb, at Staxton Brow, on Easter Monday.

CLUB NEWS.

Walsall M.C.

he hill-climb announced for the 18th on Style Kop, near geley, has been postponed. It may be held next Saturday permit can be obtained from the Auto Cycle Union.

Middlesbrough and District M.C.C.

his club opened the season on Good Friday, when a large ber of motor cyclists left headquarters, Marton Bunga- in the early morning for a run to Richmond to attend meet. A capital programme has been arranged by Mr. A. George, hon. sports sec.

he April and May events are: April 22nd, hill-climb on tleton Bank; May 3rd, flexibility hill-climb on Yearby k; May 20th, hill-climb on Ormesby Bank for old hines; May 21st, Northern League individual reliability of 150 miles from York.

e two winners of the Staxton Brow hill-climb on Easter Monday. Left, V. Gash (6 h.p. J.A.P.); right, T. W. B. Durant (3½ h.p. J.A.P.)

Streatham and District M.C.C.

The above club is holding a members' hill-climb on the 29th inst., the venue being kept secret. There are seven classes. The awards will be made on A.C.U. formula. Competitors will weigh in at the Clayton Arms, Godstone, at 2.30 p.m., and the climb will start at 3.30 p.m.

Sutton Coldfield A.C.

The club is fortunate in having had presented to it a handsome silver challenge trophy, value twenty-five guineas, by Messrs. B. Muratti, Sons and Co., cigarette manufacturers of Manchester, which will be known as Muratti's Ariston Trophy. This will be awarded to the competitor making the best performance in all the club competitions of the year. The trophy has to be won three years in succession before becoming the absolute property of the competitor.

Liverpool A.C.C.

A word of warning should be given to those motor cyclists who reside in or near Liverpool and Birkenhead. The police in these districts are very active at present. Five members of this club, whose total membership is thirty-two, have been summoned for various offences under the Motor Car Act within the short time of one week, one being a lady member.

In the Eastham district the police are very keen on badly lighted numbers, one member of this club being summoned for having the light (a 5in. Rotax burning brightly) only illuminating one side of the plate.

Perth and District M.C.C.

A speed-judging competition took place on Bank Holiday, and the members started independently in a snowstorm for St. Andrews. After lunch in the Victoria Café starts were made at one minute intervals, the finish being the Moncreiffe Arms, Bridge-of-Earn (thirty miles). An analysis of the times revealed the following results:

1 and 2, a tie.—J. Beveridge (3½ h.p. Triumph), minus 2; and J. Mcfarlane (3½ h.p. Triumph), minus 2. Receive prizes.

3.—Hon. A. J. Stuart and passenger (3½ h.p. T.T. Triumph and sidecar), minus 3.

An entry of fifteen was recorded, which under the deplorable weather conditions (snow and pelting rain all day) may be considered satisfactory.

Club News—

Bristol B. and M.C.

Entries for the open hill-climb on the 29th inst. close first post on Saturday next, the 22nd inst., and should be sent to Mr. Philip Grout, hon. sec., Warmley, Bristol.

Ilkley and District M.C.C.

The second breakdown competition was held at head-quarters on Tuesday, April 11th, for a prize presented by the president. There were eight competitors, of whom J. N. Longfield proved the winner.

Ayr and District M.C.

The opening run took place on the 12th inst., the destination being Largs.

Motor cyclists in the district who are not already members should communicate with the joint hon. secs., Messrs. Robertson and Sommerville, at the headquarters, 74, Dalblair Road, Ayr.

Newcastle M.C.

This club opened the season on Good Friday with a run to Hexham, where after luncheon a speed-judging competition was held. Several motor cyclists took part, the winner of third place being G. C. Unwin (3½ h.p. Dene). The first and second prizes were won by car owners, the president (Mr. J. R. Atkinson) being second on his 12-14 h.p. Armstrong-Whitworth.

Leeds M.C.C.

To-morrow (Friday) evening Mr. J. V. Robinson, of Douglas Bros., will lecture on the Douglas lightweight motor cycle at the Grand Central Hotel at 8 o'clock. The lecture is open to all motor cyclists, whether members of the Leeds Club or not.

There has been an influx of new members this year, and the hon. sec., Mr. Jas. R. Kelly, 25, Bridge End, will be glad to hear from any prospective members. The entrance fee has been abolished, and the subscription is now 10s. per annum.

Manchester M.C.

A good muster of members attended at Old Trafford on Friday last for the start of the annual four days' Easter tour, and on this occasion a one day's reliability run on rather novel lines was included.

Leaving at 8.30 a.m. intervals were allowed to elapse between sending off the competitors, and an allowance of seven hours was given to arrive at Beddgelert (110 miles) with an interval for lunch at Bettws-y-Coed, the winner to be the one who completed the journey nearest to that time, every minute over or under entailing the loss of one mark.

Competitors could travel by any route or at any speed to Bettws-y-Coed, and stops were not counted, but from there to the destination every stop was penalised by the loss of five marks.

On the Saturday several of the more athletic members made the ascent of Snowdon, whilst others proceeded to Aberystwyth (lunch) and Tenby for the night. The third day's route was by way of Carmarthen, Brecon (lunch), Monmouth, Speech House, Gloucester, and Cheltenham (night) Fourth day, Stratford-on-Avon, Warwick, Kenilworth, Lichfield, and home, a total of about 520 miles.

Cork and District M.C.C. speed judging contest. Some of the competitors at the starting point.

Essex M.C.

Members are reminded that the run on the 23rd inst. wil start from the Eagle Hotel, Snaresbrook, at 11 a.m., fo Southend, lunch at the Palace Hotel, at 1.30 p.m.

Cork and District M.C.C.

A speed-judging contest took place on Friday last ove a circuit of six and a quarter miles, which had to be covere five times. There were sixteen entrants, and J. Healy (3½ h.p Rudge) was the winner with a total error of 3½ mins.

Coventry and Warwickshire M.C.

Entry forms for the Amateur *v.* Trade Trial on Ma 13th are now in the hands of members. The trial will b of 100 miles duration, and include ascents of Newnhar Hill (steepest gradient 1 in 6). Watches and speedometer will be barred. Entrance fee, 2s. 6d. This event is also i the nature of an eliminating trial to select teams for thi year's inter-club championships. Motor cyclists desiring t take part must become members. Proposal forms for mem bership may be obtained from the hon. sec., Mr. G. Smith 19, Hertford Street, Coventry.

Woolwich, Plumstead, and District M.C.

The opening run to Lamberhurst took place on the 16t inst. under most favourable conditions. Fourteen, includin two ladies, attended. One member unfortunately failed t reach the destination with his sidecar combination, owin to a series of belt troubles and finally a broken frame a River Hill.

The general meeting will take place to-night, the 20t inst., at the Empire Restaurant, New Road, Woolwich, a nine o'clock.

The run for the 23rd inst. will be decided by those attend ing the meeting place, Fountain, Woolwich Common, a 10 a.m.

Members of the Manchester M.C. ready to start for the Easter tour and reliability run to North Wales on Friday last.

THE MOTOR CYCLE

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The Spring Quarterly Trial.

THE second trial of 1911, held in the Yorkshire centre, was again a conspicuous success despite the want of unanimity among manufacturers as to whether they should compete in these one-day trials. It is a great pity that some unanimous agreement cannot be come to, as it is probable that, if all the best-known makers took part, the percentage of first-class certificates would be much larger and the pastime receive a much better advertisement thereby. Only fourteen out of forty-two in Saturday's event finished the course without an involuntary stop. This proportion might be increased if complaints being impeded on the test hills were upheld, whilst another competitor who pedalled once was deprived of a "non-stop" certificate, much to his disgust. The Auto Cycle Union's and this journal's campaign in favour of change-speed gears is bearing fruit, for we believe we are right in stating that never before have variably-geared machines outnumbered single-geared mounts. Only one rider using a single-gear ratio accomplished a non-stop run, which is, on the face of it, a poor advertisement for this type of machine, notwithstanding the exceptional severity of the course. But this lesson does not carry so much weight when it is remembered that some of the best exponents of the single-geared mount were unrepresented. Several change-speed machines failed on the test-hills, mainly through overheated engines. We will go so far as to say that a number of makes of motor cycles with single gears could successfully account for all the hills included in Saturday's course, but the decision of certain manufacturers to absent themselves from the competition gives the single-geared mount a set-back in the eyes of the novice.

A Farcical Position.

AS reported in our last issue, another big meet of Northern motor cyclists was held on Good Friday last, and the opportunity was taken, as in previous years, to organise a mass meeting in the Richmond Town Hall, when the officials of the Northern League of Motor Cyclists offered an explanation of the respective positions of the Auto Cycle Union and the Northern League.

It is somewhat unsatisfactory to have to record that the two bodies are still working separately, and there appears little prospect of their arriving at an amicable settlement while the A.C.U. proclaims the events held by the League and the League makes no attempt to enter into negotiations for the reinstatement of the suspended riders who competed in its last year's hill-climb and trials. Setting the Southerners at defiance, the League held another hill-climb on Easter Monday, which, although not at all representative, was fairly well supported by Northern riders, who apparently regard being banned from other open competitions held under A.C.U. regulations with callous indifference. As a matter of fact, more than one "banned" rider has since competed in an event sanctioned by the A.C.U.

The position is rather farcical, because the A.C.U. has invaded the territory of the League by holding last Saturday's Quarterly Trials in the East Riding of Yorkshire.

The situation at present is that neither body is prepared to make any decided move towards reconciliation, although we understand that the Northern League has advanced half way. Surely it is high time a joint conference was arranged and this unsatisfactory state of affairs settled.

The Balancing of V Twin Engines

OWING to the number of queries received from time to time from readers of *The Motor Cycle* who own twin-cylinder machines asking how they can improve the balance of their engines, the Editor has asked me to supplement a couple of articles on that subject which appeared in these columns last year over my *nom de plume*.

The first one dealt with single-cylinder engines, the second with 90° twins and also pointed out the advantages of this type of engine; there was to have been a third dealing with the more general type of twin in which the cylinders are set at 40°, 45°, 50°, etc., but owing to many and various reasons it was never written.

In the two previous articles it was shown why it was advisable to balance an engine and also why and how the best all-round results for those particular cases were obtained when the whole of the rotating masses and half the reciprocating masses were balanced.

Balancing the 90° Twin.

The same article also described how in the case of the single-cylinder engine there was still a considerable unbalanced force which could not be eliminated without resorting to the use of special mechanism, but that in the case of the 90° twin, by balancing exactly the same proportion of the masses, the final balance was as nearly perfect as it was possible with any type of engine, and, further, that apart from balance, the turning effort of such an engine was much superior to that of any other type.

Accepting, then, the fact that for single-cylinder engines the whole of the rotating masses and half the reciprocating masses are the correct amounts to balance, it is easy to see that a twin-cylinder engine with a single-throw crank and both cylinders vertical, in other words, zero degrees apart, being in reality a single-cylinder unit, ought therefore to be treated as such, the final results being similar also.

Now if we open the cylinders out to 180°, still making them act on the single crank, we have exactly the same type of engine as far as balance goes, because all the reciprocating masses move together in the same direction at the same time; therefore, we ought again to balance the same proportion of the masses, the remaining unbalanced force being of the same magnitude as for a single.

We have already proved, however, that when the cylinders are opened out to 90° only exactly the same proportion of the masses are to be balanced, but that in this case there is no remaining unbalanced force, the balance being almost perfect. It must be f evident now that for a twin-cylinder engine indeed, for an engine with any number of r cylinders in the same plane), no matter what angle between the cylinders be, so long as it has a single-throw crank, the best results are to obtained when the whole of the rotating masses half the reciprocating masses are balanced. difference in the angle of the cylinders merely af the magnitude of the final unbalanced force.

Why the 90° Engine is Best.

Thus, 90° being the best angle with no unbala force, the further one departs from 90° on either of it the larger the unbalanced force becomes it reaches a maximum at 0° and 180°. Also, nearer one approaches to 90° the smoother run will the engine be, for at 90° the transverse in couple is non-existent, increasing to a maximu 0° and 180°.

No account has been taken of connecting rod s and no allowance has been made for it, so that not quite justified in saying that the best results obtained with those proportions of the masses, I readily admit that a further improvement ca made by suitable allowances, but such improve would scarcely repay to everyone the extra trouble complication necessitated in weighing the parts calculating the proportions.

It was the ease with which the above given imp ments could be obtained by anyone who care experiment with his flywheels any time he has engine down that originally prompted me to set forth, because at that time most makers paid or no attention whatever to balancing, with r uncomfortable results. Now, however, only in a cases can any very appreciable improvement be by the owner himself at home.

How to Test the Balance.

For the benefit then of those who own en that are given to vibrating badly and who would to improve them I will again explain the method an amelioration can be made without much tro The chief difficulty, of course, is the drilling, a lot of metal has to be removed it may be nece to have recourse to a big drilling machine capab boring a ½in. or even ¾in. hole right through flywheels.

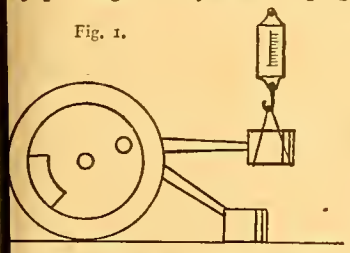
Firstly, then, by rotating masses are meant crank pin and nuts, and the big ends of the con ing rods; by reciprocating masses are meant pistons, gudgeon pins, and screws, if any, and ends of the connecting rods. Secondly, to get a weights of these parts and to carry out the a balancing without having to take the flywheels a

e Balancing of V Twin Engines.—

nce we need only balance half the reciprocating asses it is evident that in the case of a twin-cylinder gine the weight of one piston complete and one all end will be the weight we require, both pistons ing similar.

Procure, then, a small but reliable spring balance, d, placing the flywheels upright, hang one of the pistons out of it, keeping the connecting rod horizontal as in fig. 1. The reading on the balance will be the weight of one piston complete and one small end, equal to half the whole of the reciprocating masses.

Fig. 1.



= ½ reciprocating mass + bobweight.
= Rotating mass + reciprocating mass.
r balance W¹ = W
'. bobweight = rotating mass + ½ reciprocating mass.

Next procure a couple of round or are steel rods which at most need be no longer than oot; pack them upon a table or bench high enough sufficiently far apart to allow the main shafts to rest them and still allow the flywheels to swing quite with the pistons hanging down; level up carey. (See fig. 2.)

The Balancing Process.

ow exactly opposite to and at the same radius he crank pin drill a small hole ⅛in. at most, and it, by means of a piece of bent wire, hang weights al to half the reciprocating masses, as found ve. Place the whole on rods and allow it to g freely, and whichever point falls to the bottom he heaviest and should be drilled; an approxie idea of how much to drill out may be gained by ing extra weight to the hook till a rough balance btained.

The above process should be repeated until the flywheels show no tendency whatever to come to rest with some particular point always lowermost. The reason for that particular arrangement of weights will be evident from the sketch, as when the weights are removed the crank pin end is heavier by the weight removed, viz., half the reciprocating masses, which is as it should be.

Single-cylinder Sleeve Valve Engines.

While on the subject of balancing, although not within the sphere of this article, might I be allowed to draw attention to a frequently forgotten drawback of sleeve valve engines when applied to motor cycles in the single-cylinder and also in the twin type, and that is balancing.

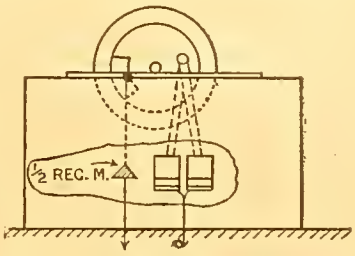


Fig. 2. Pistons should be slung from both ends as shown.

Now in a four or six-cylinder engine the sleeves can be made to balance each other just as the pistons do, but when there is only one set of sleeves the difficulty is very great, as, although they can be partially balanced by bob weights on the flywheels, the result at best is far from satisfactory. The reason is that the sleeves reciprocate half as often as the flywheels revolve, and, further, that they are not necessarily at the end of the stroke when the bob weight is also at its lowest point, so that the extra weight to be added has to be in some other place than opposite the crank pin, all of which leads to an upsetting of the true balance. As far as I can see this question of balancing is about the chief drawback to air-cooled sleeve valve engines of any design.

WINKIE.

Sidecarists in the M.C.C. Jarrott Cup Competition. E. B. Ware and J. Chater Lea on 8 h.p. Chater Lea three-speed chain-driven machines at Land's End.

Occasional Comment

Clutch Control.

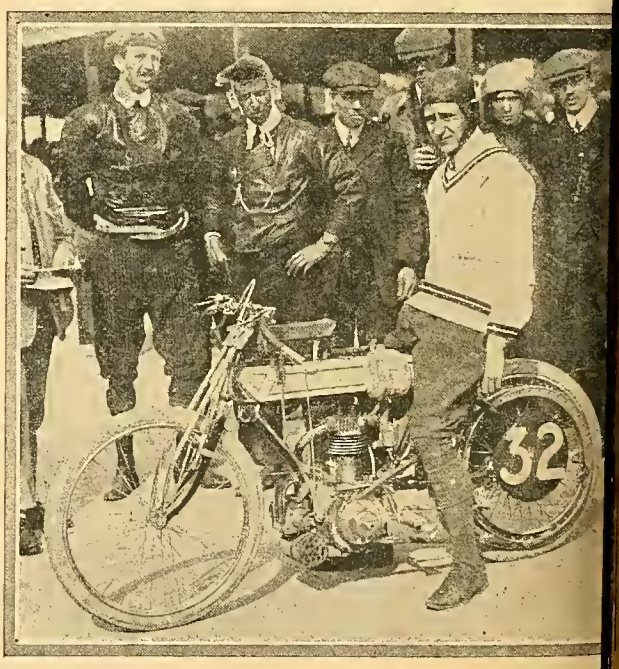
At Olympia I heard quite a warm dispute as to whether a stumpy pedal or a long lever was the better form of control for a free engine clutch. On the one hand the tiny pedal was no doubt neater of aspect, and foot control was also more desirable than throwing the burden of another operation on the already busy fingers. On the other hand, the long lever gives a more delicate control, and is also less liable to injury in its snug position against the tank side. It would be interesting to see the question further threshed out now that many riders have prolonged experience of both types. For myself, I am satisfied with neither. I doubt if a short pedal leads to properly delicate clutch work, and at the same time I regard a long hand lever as awkward to manipulate. Can no genius invent a compromise?

External Band Brakes.

I have often tilted—and apparently to little purpose—at that loathsome abomination, the external band brake, long since wisely discarded by all sane designers of four-wheeled motor vehicles. On the Show stand it is perfectly satisfactory. When the drum and band are alike free from grit, and the arc of strip steel retains the symmetry of its contour, external band brakes are as good as you can get. They can be adjusted to clear the drum all the way round, they will go on delicately, and they will grip like a bull-dog. A week after the machine has taken the road, they are a very different proposition. Insidious grit has fouled both drum and strap. The clogged wheel revolves laboriously and unwillingly—I dare not dignify its volution by the honoured word "spin." In fact, it is "always on," and generally rather hard "on." A week later comes another chapter in its history. The continual friction of travel has polished the band hard and smooth, indeed has generally charred its surface, and now no power on earth will induce that band to grip really hard, while it is equally impossible to make it come wholly "off," except by removing the parts and cleaning them; even then it can never grip again as a brake should, until it has been relined. I have described the band brake at its best; but I overhauled an actual machine delivered to a friend of mine last week which was afflicted with *two* of these hideosities. Both gripped like a sinful habit; in fact, an unwary driver would have been chucked incontinent over his handle-bars the first time he applied them, unless his considerate machine had skidded and picked a soft falling place for him in the hedge. A week later both drums were running nearly red hot, owing to the friction of insidious grit. It is high time these blots were deleted from the motor cycling scutcheon. I grow weary of asserting that the dummy belt rim with pedal applied shoe is the brake motor cyclists want on motor cycles. Whilst writing on this subject I would counsel the designers of variably gea machines to pay more attention to their brakes. Sc samples I have ridden are by no means faultless this very vital detail. Were this not so, I should r be riding quite a different machine from that wh enjoys the doubtful honour of serving as my carrie

Another Grumble.

Will the motoring tailors and outfitters please eng as their next season's model somebody who is ashamed to own an honest boot? I fancy they at p sent build up the original idea for the creations which they garb us on a wax dummy with pe extremities of the dancing pump size. I am speak chiefly of legging overalls, and let me say at once all honesty the profile of these garments leaves noth to be desired. I positively swoon with vanity whe see my shapely calf swelling out one of these creati But I advisedly say "when," for, as a rule, long be I have insinuated my leg down the prettily cut por designed to fit my calf, my boot has burst the way at the far end into a streaming mass of rents ribbons. I am of a destructive nature, and enjoy sound of ripping fabric as much as most men; bu am also parsimonious and grudge too frequent p sures of this kind when I am asked to pay—whe the bill?—15s. 11d. a time for it. The tailors ou to allow an extra reef over the instep.



V. Wilberforce (N.L.G.-J.A.P., 76 x 65½ mm.), winner of the 65 m.p.h. handi at Brooklands on Easter Monday. Speed, 53½ m.p.h.

FIRST LADIES' COMPETITION.

The personal experiences of lady motor cyclists in this pioneer event for *The Motor Cycle* Cup held on Good Friday and Easter Monday from Barnet to Harrogate and back—400 miles.

Wade's Plucky Attempt to Finish.

njoyed my trip to Harrogate very indeed.

the 13th inst. I left Cardiff by to join the rnn to Harrogate. morning I started at 7.30 and fine run until nearing Harrogate, I experienced a little trouble. The end was very pleasant, and on the ay I started back with the rest for ld, all going well until Doncaster. bouts my machine faltered on hills, eemed to have no speed. After adjustments, at last I found it was one cylinder getting all the oil he other none. Making up lost had a puncture nine miles from e, and it was then too late to think

B. Wade and her 3½ h.p. two-stroke Scott.

ing before dark, so I enjoyed my- looking about the country. lly I reached Buckden and put he Lion Hotel, where I was most able. I feel it only right to speak Robinson's garage at Buckden, ll cyclists will find a capable man very obliging. Then I rode on field, leaving next morning for way of Marlborough, Swindon, am, and Gloucester, and a more il run I never had.

(Mrs.) ADELINA B. WADE.

ost Enjoyable Holiday.

sk for my impressions of the first trial to Harrogate and back. was the most enjoyable holiday ever had, and although I had eviously covered more than about ed miles in a day's run, I feel -day (Tuesday) than when I left imagined that as it was my first ion I should have some difficulty ng the checks to time, having in distance, and allowing time for nts *en route*. It was, however, quite an easy matter for the Douglas, and, excepting in one instance, I had five to ten minutes for a rest.

I only had two involuntary stops on the whole journey there and back—a high-tension wire became detached from the plug, and a slight adjustment to the clutch became necessary. Vibration on this machine is quite unnoticeable, even when the engine is running free.

Miss R. Hammett (2¾ h.p. two-speed Douglas).

It was a pleasure to note the sporting spirit displayed by most of the competitors. If anyone was held up by some little derangement, help was forthcoming at once, whilst the ladies were given as much room and as little dust as possible.

I very much hope that the fact of the four lady motor cyclists who started all reaching Harrogate, three returning to Hatfield to time, will induce more ladies to take up the pastime.

(Miss) R. HAMMETT.

Mrs. Margaret C. Cooke (3½ h.p. free engine Triumph).

Ready to Undertake a Similar Journey.

The first ladies' competition is now a thing of the past, and as a competitor I should like to say how much I have enjoyed it.

From an outsider's point of view the trial may have seemed too strenuous, and it certainly was rather ambitious for a pioneer event, but the fact that out of the four starters four arrived at Harrogate, and three completed the double journey in schedule time speaks for itself.

Personally, I had not been on a machine for over five months, and only received mine from the makers the evening before. Hence, it was rather risky undertaking a long journey, but, thanks to my trusty Triumph, I am back again safe and sound, ready and fit to undertake a similar journey if necessary.

Miss Lottie Berend (3½ h.p. free engine Brough).

The weather was better than we expected. We had wind and dust in abundance on the outward journey, but no rain, and the return journey was all that could be desired.

The first day's run was uneventful, except for a burst inner tube, which was soon remedied by the fitting of a butt-ended Michelin. The second day's accident was much more lively, for the pillar tube snapped across. This was a more serious matter. However, by the aid of straps I was able to ride the remaining 100 miles to the finishing point. Fortunately, both incidents took place immediately after the luncheon interval, hence it was possible to get on to the next checking point without losing marks.

(Mrs.) MARGARET C. COOKE.

Looking Forward to Next Year's Run.

The Easter competition for the best performance by a lady on an open frame

motor cycle proved to be the best trial I have as yet taken part in. The weather was ideal, and my machine in perfect condition.

I had expected to see many ladies at the start, but the hour of meeting involved getting up somewhat earlier perhaps than usual, and so only the most enthusiastic were to be seen.

I myself had absolutely no trouble on the outward journey, and returning had but a few minutes' stop after leaving Sleaford, the trouble being a sooted plug. I was indeed sorry to see the other lady competitors in trouble, but, happily, their stops did not interfere with their reaching checks and controls on time.

The hill-climb proved to be the most exciting part of the competition. The hill was in rather a bad condition, and this, coupled with a strong head wind, made a fast ascent somewhat of a task.

Now that the first ladies' compe is over, may we look forward to more during the summer. It certainly help to influence other lad take up the power-propelled bicycl they only knew the enjoyment d from a good motor cycle, and the f riding in competitions, I am con many more would adopt the pastir

I shall look forward to next year'

(Miss) LOTTIE BER

THE ROTAX LAMP AND GENERATOR.

The Rotax lamp sold by the Rotax Accessories Co., Great Eastern Street, E.C., is built on accepted lines, and is

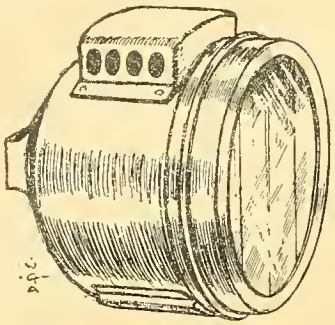


Fig. 1.—The Rotax lens mirror lamp.

fitted with the well-known Mangin lens mirror. The body is spun out of one piece of metal, and the whole is well made and soundly constructed. The generator, however, is made somewhat differently from the usual motor cycle lamp generator; instead of being vertical it is horizontal, although it is not the first to be designed on such lines. It works on the drip principle, and carries the carbide container in a tunnel in the water tank body. Fig. 2 shows the complete generator with the water tap A and the screw B which holds the container in position, while fig. 3 shows the container open and when held vertically ready for filling. All that portion above the container is occupied by water, and on the top of the generator may be seen the filler and gas tube union. The water passes from the tank through the tap to the centre of the generator through a hole at the end of the container, while the gas issues from the other end and finally passes out through the union on the top of the generator. The tap is provided with a hole C, which when the water is shut off allows the gas to e When filled the container is held in by the screw B, and the tunnel is

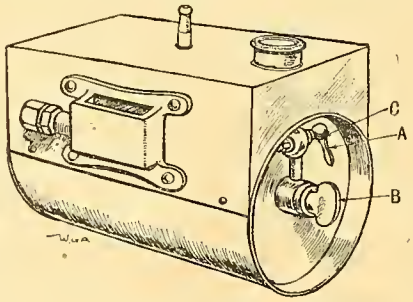


Fig. 2.—A, water tap; B, container holding-screw; C, gas vent hole.

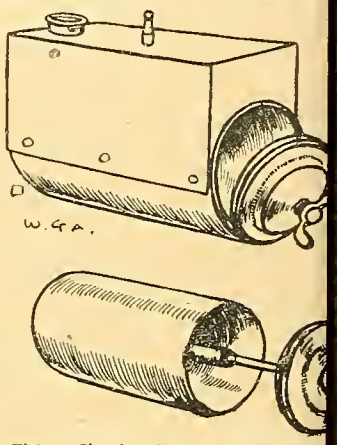


Fig. 3.—Showing door to generator tur and container opened ready for filling

and made gastight by the rubber door shown in fig. 3. The genera built on absolutely sound lines possessing the advantage that it more easy to clean than the or type should give no trouble.

THE PILLION OR TANDEM SEAT.

Judging from present indications, the pillion or tandem rear seat is likely to become increasingly popular this year. Several have been noticed in use, and during a recent week-end run over Southern roads a correspondent noted four machines of modern make carrying a passenger in this manner.

G. Edwards, jun., and his sister, with their Bradbury and pillion seat. The pair have made several long runs in this manner.

A pillion seat, if not very sociable, certainly has some advantages, and with rubber-studded tyres it is said there is no greater tendency to skid, though care is necessary and corners need to be taken cautiously.

A free engine and two speeds would appear most suitable, but not absolutely necessary on a modern and powerful mount. A clutch, however, is indispensable for starting from a standstill with the passenger seated.

A Home-made Pillion Seat.

The accompanying illustrations show a simple form of pillion made by a private owner of a Bradbury, Mr. George Edwards, jun., of Mottingham, Kent, which he has had in use since the early part of the year.

It is of his own design and make, and is intended to fit over the tubular carrier as used on the latest Triumph, Bradbury, etc.

It is made with a wooden base and back rest, upholstered and sprung with small spiral springs similar to a car cushion. A rubber-covered footboard is provided, two metal stays conn it to the bicycle.

Mr. Edwards's passengers decla seat to be as comfortable as a s and conversation is easier.

The helt side of the machine, showing foo and natural position of the passenger's fe

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Petrol Overflow.

I have an old 1903 Minerva engine on a forecar. The engine is all right, but I get an overflow of petrol at the jet chamber of the carburetter. Could you explain this?—J.W.

Examine the float chamber and see if needle is seating itself properly on seating. Also try grinding it in with little crocus powder. Too much vibration of the needle will cause an overflow of petrol.

Carburetter Drip.

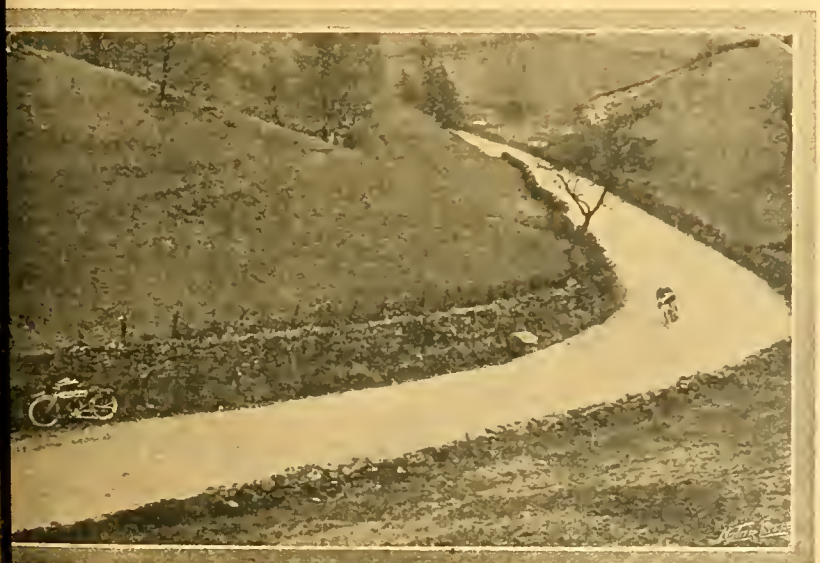
I have a B. and B. carburetter, and when the machine is at rest petrol drips slightly from base of spray chamber. This necessitates closing petrol tap when out riding. I have had the carburetter down and everything is clean, jet included. Can you tell me the probable cause of leakage, and if so, how to cure it?—W.K.

Have you carefully examined the needle valve to see whether the latter is bent, or there is any grit on the seating? Either of the above causes would account for the drip from your carburetter; otherwise, follow advice to "J.W."

Valve Opening.

My motor cycle travels only slowly with throttle full on, and stops on slight gradients. I have had no experience with automatic valves before, but possess a 3 h.p. mechanical valve. (1.) I wish to know how to adjust the valve, what weight is necessary to open the valve, and how much opening. (2.) What is the correct combination of jet and tube (Longuemare)? (3.) A very long inlet pipe is fitted; does this cause trouble through bad mixture? No adjustment of the air makes any difference.—W.H.

(1.) You should adjust the lift of the valve by inserting a washer underneath the valve collar until it opens about three-thirty-seconds of an inch. Use a fairly strong inlet valve spring with such a tension that you can hold the valve in your hand and shake it and it only opens a small amount. (2.) The correct combination of jet and choke tube can only be found out by experiment. (3.) We should be inclined to think the trouble is due to a weak exhaust valve spring. The machine is about eight years old. After it has had a general overhaul we think you will get the machine in tune without much trouble.



North Staffs. M.C.C. Hill-climb at Allgreave, nr. Congleton, Cheshire, on Easter Monday. H. H. Wellings is seen rounding the bad corner, and incidentally making fastest time on his 6 h.p. Dot-Jap.

Weak Valve Springs.

My machine is fast on the level, but up a hill of 1 in 14 (approached at a good pace) it goes well for a short distance, then loses its power and peters out altogether. I have cleaned out deposit from cylinders, sparking is right, and I open throttle fully up the hill mentioned, gradually closing air lever as soon as I notice machine beginning to slow down. The puzzle to me is that the machine formerly romped up the hill. Would increasing size of jet give more power?—J.H.B.

We are inclined to think that the trouble is due to the valve springs having lost their tension, and the valve seatings being pitted. You might try new springs. There is no reason, if the jet were satisfactory before, why it should require enlarging now.

Testing Magneto.

Could you help me to a solution of the cause of misfiring of my engine? When out the other day it gradually missed till it stopped, I got it going again after cleaning magneto tips, carbons, etc., and the sparking plug, but the same thing occurred again. I put it down to the plug, a Bosch four-electrode pattern. A friend lent me an identical plug, and this has run about a 100 miles without a misfire. On going to the garage for a replacement, I had a Bosch two-electrode fitted; this fired about a quarter of a minute on the stand, and any amount of pedalling would not create another explosion. This occurred with five other like plugs and one other make. I was told it was the magneto, but still there is a beautiful spark from the plug end of high tension wire to engine.—T.H.S.

You can test the magneto by getting someone to pedal your machine with the exhaust valve lifter raised and hold the wire within ¼in. of the cylinder. If when the engine is pedalled round there is a regular and fat spark we do not think you need have cause to doubt the magneto. Some machines are very sensitive as to the plugs used. Probably after you have tried two or three different makes you will find one which will suit the engine. Were the plugs clean when removed? Should the magneto prove faulty, it would be as well to send it away to the makers for overhaul.

Delay in Delivery.

Last November I ordered a 7 h.p. machine through a well-known firm of dealers, and on the invoice I received were the words "to be delivered early in February." The machine is now some weeks overdue, and though I have repeatedly written, I cannot even now get a definite time for delivery. In the circumstances have I the legal right to refuse to take delivery of this machine? Of course, I am not blaming the dealers, as I know they cannot let me have the machine if the makers have not got one ready.—A.K.

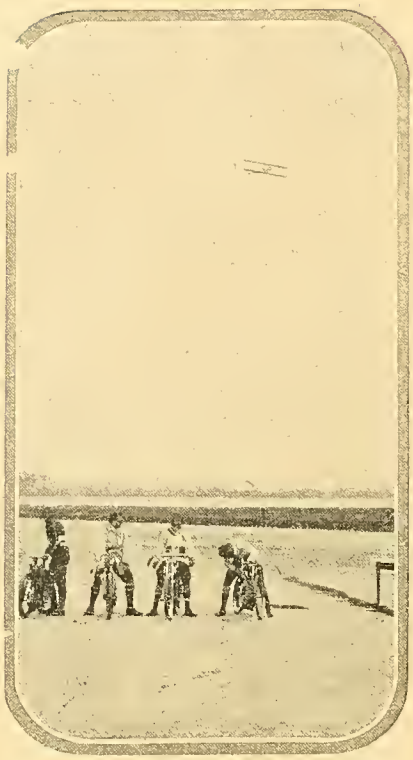
Our legal adviser says: "Your correspondent must of course, only deal with the agents with whom he made the contract, and from the terms of which it would appear that delivery of the motor cycle 'early in February' was one of the essential terms of the contract. This being so, he would be entitled to inform them that he refuses to receive the machine, but it is always the safest to give a written notice by registered post, stating that if the motor cycle is not delivered by a certain date he will consider the contract broken, and will refuse to accept it, and also will claim any damages sustained. The damages he would be entitled to would be the extra cost (if any) of purchasing a motor cycle of equal value."

Tricar Tax.

I observe in *The Motor Cycle* of the 6th inst., on page 346, that you state that the local taxation licence on a tricar is only £1. I am the owner of an A.C. tricar, and as I have had to register it as a car I have paid car tax, namely, £2 2s. I am anxious to make some attempt to recover the difference, so will you kindly instruct me as to the best course to pursue?—TRICAR.

We have submitted your query to our legal adviser, who replies as follows: "With regard to 'Tricar's' query, I do not think that the weight of the tricar really affects the question. If a tricar is a motor tricycle, then no matter what the weight may be, or what the horse-power, the duty of £1 covers it. You recently got the opinion of the Treasury Office with regard to sidecars, and they confirmed your views that a sidecar was not to be taxed separately or additionally, unless it could be used as a separate vehicle. Consequently, whether a tricar is a motor tricycle or is a motor cycle with tricar attachment, £1 duty only would be payable. I do not think that 'Tricar' could recover the amount he has overpaid. If he started proceedings he would, of course, do so for the recovery of money paid in mistake, but the authorities might successfully contend that the licence he took out enabled him to have a motor car if he wished to do so, and the fact that he has not had one is nothing to do with them."

AT BROOKLANDS.



A biplane flying over the heads of the competitors in the motor cycle races.

Starting with Sidecar.

Is a 1911 Triumph motor cy strong enough to take a side and passenger? If so, I supp the sidecar should be fixed on left side of cycle; but as the fr engine clutch pedal is on the right s of machine having sidecar on would prevent the rider from push off with his left foot in starting so helping the clutch. I should like know whether you think the clu would be strong enough to start on le ground with sidecar and passeng without help.—S.H.M.

The machine is strong enough to take sidecar. It will be, however, by means a "go-anywhere" machine, beca the power is rather limited for side work, and no change-speed gear is fitt If you had a low gear there would no need to push off with the foot w you start from standstill. However, think that with a little practice you c do this. The sidecar should certainly on the left side. It is not a question the clutch being strong enough to s the machine on level ground, but of gear being sufficiently low to take up drive comfortably. It certainly would do this on an up-grade unless a low g ratio were fitted.

EXPERIENCES WANTED.

"J.H.H." (Otley). The 2½ h.p. lig weight Torpedo.

"F.H." (Manchester). Scott t stroke motor bicycle and sidecar; T.A.C. and sidecar in a hilly country

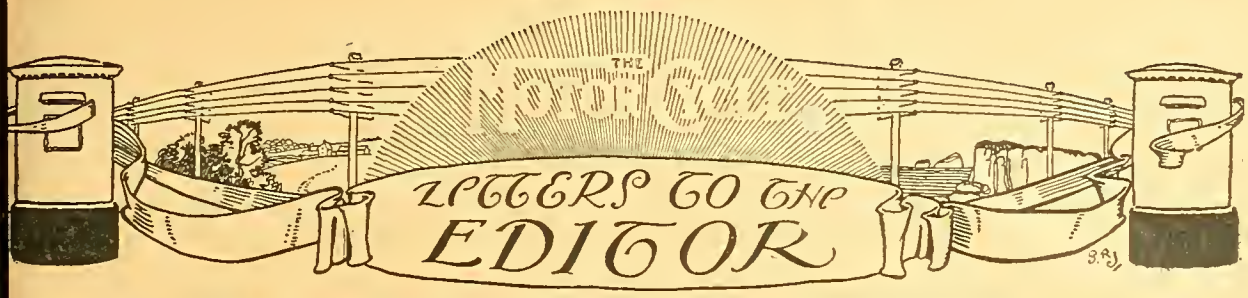
"W.P.K." (Borris). 1910 four-cy der F.N. with automatic carburet reliability, ease of starting on hills petrol consumption.

"C.W.G." (Merton). The S motor bicycle for all-round touring a sidecar. Could the combination started from rest on a hill like Wes ham?

"R.K." (Cape Colony). The S two-stroke engine. How slowly ca be made to run on low gear comb with half-compression device? How will it run slowly without misfiring?

The 1911 Roc two-stroke engine. engine liable to overheat, and can i made to run slowly? If so, for how l

The check at Doncaster in the Herts. County Inter-team Reliability Trial to Harrogate and back.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Dutch Club's Visit to the Isle of Man.

[5557.]—Regarding the letter from Mr. P. S. Clews th reference to the Dutch Club's visit to the T.T. Races, club would be very pleased to meet the members of e Dutch Club on their way to Liverpool, and ride with em into the town, also to spend a social evening with them our headquarters. We will also see them on the boat to e island, as many of our members will be travelling over the same time.

F. REES, hon. sec. Mersey Motor Club.

The Brooklands Wobble.

[5558.]—We have noticed recently a considerable amount discussion with regard to the difficulty of steering at high ed on the Brooklands track, owing to what has come to known as the "Brooklands wobble."

f any owner of a motor cycle cares to send his machine us, we will rebuild the frame, and if he is still unable hold the machine by reason of the steering, we will make a present of the new frame absolutely free of cost.

NORTH LONDON GARAGE.
ARTHUR G. FORSTER, Manager.

Interchangeability of Tyres.

[5559.]—With reference to your leaderette "Interngeability of Tyres," I am pleased to see that you are pursuing this vexed question. There have been several tyres placed on the market recently, and I have been pted to try one or two on account of the principle on ich they are moulded, but have refrained from doing through fear that they might not fit my present rims. ven if the Manufacturers' Union follow out your suggesn—and it certainly should be able to force the tyre manuturers' hands—I do not see any possibility of the evil ng rectified during this year. D.C. 235.

Liability of Sidecar Drivers.

5560.]—If my information be correct—and I do not reber seeing any reference to it in you paper—it appears , with the rise and increasing use of the sidecar, most us who out of kindness or friendship give a in our sidecar are each time running the risk of ng liable for damages for personal injury he or she may ain through any accident in the course of the journey. even the third party risk covers us, but it requires a ial policy costing 15s. for a £250 per claim limit. If is true some of us may find that our kindly act has n rather expensive unless we have taken out a policy over our generosity. And who has done it?

N.F.B.

Hill-climbing.

5561.]—Concerning letter No. 5530, in which Mr. Helm s that his 1911 Premier, ridden by Rev. H. Horton, the first 3½ h.p. machine to make a clean ascent of ntaford's Hill, Torquay, on such a comparatively high r as 5 to 1, I should like to point out that Mr. Percy, Tiverton, made a clean ascent of the hill last September a 1910 Triumph, geared 5 to 1. About ten days ago I le a clean ascent of Stentaford's Hill on a 1911 Brady (T.T.) geared 4⅞ to 1, my weight being 11 st. 4 lbs. He s: "This hill has the reputation of being the worst n road hill in England, as it has an average gradient of n 4 for a quarter of a mile." It is not a main road, or anything like one; in fact it goes through a Torquay slum, and leads nowhere in particular. As for its length, the 1 in 4 part is certainly not longer than 150 yards, after which it is about 1 in 12. I do not know what Mr. Helm means by a clean ascent, as he admits that l.p.a. was used. Is Mr. Helm confusing some other gradient with the actual hill?

A. C. HARDY.

Maintenance of Tune in Lightweights.

[5562.]—I should like to express my entire agreement with "Ixion" in his remarks on the maintenence of tune in lightweights. I have been the owner of lightweight and 3½ h.p. machines, and have found that the former required the carbon deposit to be removed more frequently and needed generally more attention than the latter. In my opinion, too, a heavier machine than a lightweight is required for our roads.

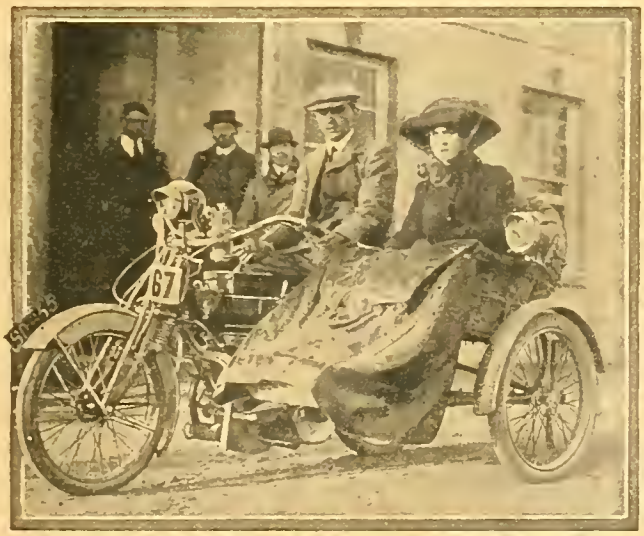
My present mount, which is a 3½ h.p., has given me absolutely no trouble, and I use it in all weathers and de a considerable amount of riding. 3½ H.P.

Johannesburg.

Change Speed Gears.

[5563.]—I have been much interested in the description and illustrations of the three-speed worm driven gear by Mr. M. Buch published in your issue of April 6th. It seems to me to be the most simple and at the same time most efficient gear for shaft-driven motor cycles that I have as yet seen. Having suffered under two different makes of gear I would welcome a gear which possesses the qualities this one appears to have. I do not doubt there are many more riders who would do the same. I shall be much obliged to you if you can find room to publish this letter and so get the opinions of other people in the matter.

WILLIAM DAVIES.



Frank Smith and his 2-speed twin-cylinder Clyno and sidecar at Land's End. He is the winner of the Cup offered by Messrs. Gwynne and Seed for sidecarists in the M.C.C. Land's End Run.

Petrol in Small Quantities.

[5564.]—When out with my wife and sidecar last Bank Holiday we stopped at Ashbourne, Derbyshire, and called at an hotel for petrol. To my utter surprise the proprietor refused to supply me with one gallon, even in spite of a full explanation that it was impossible for me to take a two gallon tin, my tanks not being large enough. Over the hotel I noticed a large board "Garage and petrol."

LEONARD YATES.

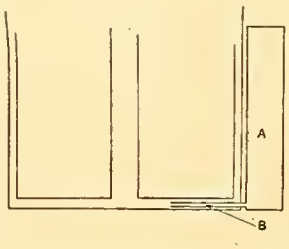
A Strange Occurrence.

[5565.]—Having recently experienced a strange occurrence, I wish to warn other motor cyclists to beware of the same. I was examining a friend's lamp to find the cause of the light not being so good, and was looking to see if there was any water in the generator, when suddenly a flame shot up out of the top (where the water is poured in) and burnt all my eyebrows, eyelashes, and hair. I shall pour in the water first next time.

A. BIRCHENHALL.

Lubrication Methods.

[5566.]—On reading your report of the interesting lecture by Mr. T. W. Loughborough on "The Modern Motor Cycle," I observe he states that "owing to high speed and small clearance, there is little, if any, liquid oil in the crank case at any time." He also stated that "for this reason any constant level device was doomed to failure."



This is a point upon which I must differ from Mr. Loughborough. As a result of many experiments I have made, the fact has been firmly established that within the crank chamber of an engine having internal flywheels a film of oil is carried round by their rotary motion supplemented by the powerful centrifugal action which maintains the film of oil between the periphery of the flywheels and the perimeter of the crank chamber. This film may be termed a working level, some portion of which becomes broken up into mist in the effort to leap the gap cut for the piston rod.

Taking advantage of this film of oil as a basis for experimentation, I found that an all-round, constant working level of oil was maintained by utilising what is known as the "bird-fountain" (air-displacement) principle. As illustrated in the accompanying sketch, I attached to the timing gear side of the crank case a reservoir or fountain A, from the bottom of which was led a short tube B, the outlet of which, under one of the flywheels, faced the volume or film of oil as the latter was carried round. By this means I found it possible to maintain in the crank chamber a const and accurate working level, equivalent to a stand-still le of ¾in. (two pumpsmil). Given the means of easily plenishing the attached fountain with oil from the ha pump (the oil being kept liquid by crank case heat), an of greater importance—the upper part of the fountain be kept airtight, what happens is simply explained:

Assuming the absence of oil in the crank chamber the fountain almost full, the momentary air compression the former caused by the descending engine piston fo a few bubbles of air into the fountain *via* the tube B. equivalent quantity of oil thus displaced from the fount is then sucked into the crank chamber by the ascend stroke of the engine piston, and so long as there i sufficiency of oil in the crank chamber to form a full (which dashes against the tube outlet and effectively cl it against the admission of air into the fountain) no m oil is allowed in until the film attenuates by consumpt By this device, which has been patented, I claim to h solved the problem of motor cycle engine lubrication. system is truly automatic, oil being supplied to the eng according to the rate of consumption, *i.e.*, in direct r to speed and load.

If Mr. Loughborough and other fellow enthusi interested in the subject of lubrication wish to investig the matter further I shall be pleased to demonstrate device in practical use.

E. A. GLEN

The Lady Motor Cyclist.

[5567.]—Mr. de Lissa is not very complimentary tow Miss Berend by attempting to insinuate that, after sev years' motor cycling experience, she has learnt so little not to know when a belt requires tightening. To mos your readers, however, it must have been abunda evident that Miss Berend was not referring to slipping b at all, but to the fact that a lightweight motor cycle m have its engine furiously driven in order to attain a of travel that a medium weight can accomplish comfort and easily on account of its higher gear.

ONLOOKE

The M.C.C. London to Land's End Trial.

[5568.]—Whilst watching the lightweights on Gunnis in Cornwall, last Saturday week, I was much intereste the performance of one machine which ascended the minus a rider, and I wondered if this remarkable fea pedestrian endurance, in the midst of a motor cycle t has been duly appreciated and recorded.

I can now quite understand the arguments used by cer writers in your correspondence columns, in preferring to a 3½ h.p. motor cycle instead of a type of machine apparently is only used as a luggage carrier on a walking t

Not being well informed of the progress of the latter motor cycle industry, perhaps I am mistaken in suppo that this particular type of machine is ever intended to c a rider up a steep hill.

MARATHO

THE STAXTON HILL-CLIMB ON EASTER MONDAY

H. Marsden (3½ Zenith-Gradua), who made an excellent ascent, leaning over at an acute angle at the sharp bend. V. Gash at the corner. He made fastest time on a 6 h.p. twin B.G.-J.A.

The Lady Motor Cyclist.

[5569.]—Surely lightweight means light *weight*, not low power. So many of your contributors appear to argue that these terms are synonymous. If it were possible to build a 6 h.p. twin, weighing, say, 110 lbs., would not this machine be as true a lightweight as any motor cycle on the road, with its baby engine and miniature tank? As an outsider, and one who has, unfortunately, no opportunity of fraternising with club members, owing to the lack of clubs in this district (Bexhill), it seems to me that a lightweight or a lightweight class should be governed solely by weight. I believe that 90% of lightweight enthusiasts in their inmost thoughts long for a machine as light as their present mount but with the hill-climbing capacity of a modern 3½ h.p. engine. R. A. EVERSHED.

[5570.]—Having read Miss Berend's letter in your issue of the 6th, I am most certainly of her opinion. A lightweight may be all very well for the lady who requires merely to dodge about the district that she knows, but never will she feel that sweet sense of independent freedom known only to the rider whose mount combines power and speed.

It is true that I have not had much experience, but I do know that it would be impossible to accomplish on a lightweight what I have done on my medium machine. For instance, several times last summer I rode in the day from Weston-super-Mare to Swanage and back, towing my sister on her bicycle, and covering a distance of about 200 miles, no mean test, especially as my machine is an old one, and some of the hills we climbed were exceptionally long.

Of course, I do not mean to run down the lightweight—it does not deserve it. But I merely say that for pleasure and comfort there is nothing to equal a more powerful machine, and I believe Mr. de Lissa will find that the greater number of lady riders are of this opinion.

(Miss) LOUIE FOOTT.

Hill-climbing.

[5571.]—I have pleasure in enclosing a photograph of Stoupe Brow, which shows Mr. T. C. Atkinson, on a 3½ h.p. T.T. Triumph, climbing part of the hill. This rider's machine absolutely refused to hold the road, and in one place threw its rider into the bushes.

On Tuesday, the 18th, I endeavoured to climb the hill from the beach on a 2½ h.p. New Hudson with three-speed gear. After making four tries I gave up, for although the machine did remarkably well, it was unable to get a grip, and, after climbing half-way up the first part of the hill, the machine would come to a standstill with the engine going. Leaving this little bit, I could easily climb the rest (about two miles), but I had a most anxious time dodging the ruts and stones. The attempt was witnessed by Messrs. Kettle, Traumer, Brooke, Strafford, Bradbury, and another.

H. W. FORTUNE.

T. C. Atkinson (3½ h.p. T.T. Triumph) who attempted to climb Stoupe Brow. The performance is referred to in a letter from H. W. Fortune.

Detachable Two-speed Gears.

[5572.]—A very interesting letter appears in *The Motor Cycle* upon the above subject. I am amused to notice that the writer, "Clarence Ponting," says, "As I use my machine daily for business purposes, and do not require the two-speed gear on my round. . . ."

I had my 2¾ h.p. Douglas fitted last October with the two-speed gear, and have now used it all the winter. I certainly would not be without it on any account. If it were only for ease and convenience of starting it is an inestimable boon.

Again, Mr. Ponting says. "I smashed up one of the best-known rubber and canvas belts of inch section in a little under 500 miles." And again, "A pulley will run probably 1,000 miles and then want renewing, whilst, if one uses a rubber belt costing nearly £1, it is considered to have done well if it runs 2,000 miles."

This is not my experience of the Douglas two-speed. I fitted a Stanley Dermatine when the two-speed was put on in October and took it out of regular wear on March 28th. In that space of time the machine has covered over 5,000 miles. The original belt pulley is still on, and the belt is still (though stretched and worn) serviceable as a spare. I put this down to the fact that the two speed is so arranged that the forward belt pulley (on the gearshaft) is over six inches in diameter, so that the belt runs under ideal conditions.

As regards detachability, this is a point upon which stress may be laid with reason. I will undertake to remove the gear box, chain, and the flywheel chain sprocket, and replace the latter by a single-gear pulley, and be on the road within ten minutes if necessary.

CHARLES S. PATTERSON, M.B., M.R.C.S.

The Brooklands Easter Meeting.

[5573.]—I must ask you to correct an inaccuracy in your account of the first motor cycle race at Brooklands on Easter Monday. You state that I was "disqualified for only going one lap!" This is quite untrue, and obviously wrong. My disqualification, for no fault of my own, was bad enough, and I lodged a protest against it at once.

I should be very glad to receive the names of any competitors or others in the first motor cycle race at Brooklands on Easter Monday who heard the starter call my number, 28, telling me to go, and also heard me question him as to whether he meant me, and his reply in the affirmative. H. GASKELL, M.B.

[We offer Dr. Gaskell our apology, and have pleasure in stating that the official explanation for the disqualification is that he did not start in his proper place in the race. A formal protest has since been lodged by Dr Gaskell against the starter's decision, which will be dealt with in due course by the stewards.—ED.]

The Constituents of Petrol.

[5574.]—In common with "N.S.M." in his letter 5495, I do not think that petrol is likely to be superseded by any other fuel for use with motor cycles. Excepting, perhaps, alcohol, there is nothing else available that can be produced so cheaply. It represents safe, clean, light, concentrated energy in a "no trouble" form. We motor cyclists should be very thankful for the inexhaustible stores of petroleum that nature has laid up for us, even though they are at present controlled by a comparatively few grasping individuals.

"N.S.M." is in error, however, when he states that petrol is principally C_4H_{10}. Petrol, or gasolene, consists almost entirely of hexane, C_6H_{14}. EDWARD O. DUNKLEY.

Spring Quarterly Trial

YORKSHIRE CENTRE EVENT
SECOND OF THE A.C.U. 1911 SERIES

EACH time it is our pleasant duty to describe the Auto Cycle Union Quarterly Trials, some such words as these, "the most successful event the A.C.U. has ever held," have crept into the report. These words are equally well applicable to last Saturday's trial. The course from Harrogate up Sutton Bank and through Helmsley and Pickering to Whitby and on to Loftus, Saltburn, Stokesley, Thirsk, and back by Ripon was one of the most difficult and at the same time the most sporting ever utilised, and evoked much interest and enthusiasm on all sides. The headquarters of the Union were the Clarendon Hotel, the excellent yard and garage of which were highly suitable for the purpose. Of the forty-six entrants there were four non-starters—J. W. Woodhouse (3½ h.p. Calthorpe), T. Pollock (3½ h.p. James), H. W. Oakley (7 h.p. T.A.C.), and S. Latham (7 h.p. T.A.C.). These men were all present at Harrogate, but for various reasons decided not to compete.

The competitors were despatched in pairs at minute intervals by Mr. H. G. Cove in the presence of a goodly crowd punctually at 9 a.m. No sooner had the Clarendon Hotel been left behind than over a dozen competitors were held up at a level crossing on the outskirts of the town. Heading for Knaresborough, the competitors spread out into a long procession, but it was not long before several experienced trouble. One of the first to suffer was G. A. Gregson on an 8 h.p. Bat, who had to stop for a sooted plug, and the same fate befell Percy Butler, mounted on a new two-speed 7 h.p. Indian. Butler seems to be dogged by ill-luck in competitions, yet he is a consistent starter and as enthusiastic as ever. He laughingly told us that whatever happened on Saturday he would account for the test hills. Before ten miles had been covered still another rider had stopped, R. A. Watson (Kerry) coming to a standstill to find on peering through the petrol filler orifice that he had forgotten to fill up with fuel at the start. Watson is an amateur, and only took delivery of his two-speed mount the night previously. Through Minskip and Boroughbridge the competitors proceeded without untoward incident, and up to Topcliffe no hill of real severity had been encountered. At Thirsk the competitors began to think about nursing their engines for the supreme test—Sutton Bank. It was generally believed that this ascent would unseat twenty-five per cent. of the riders, despite the prevalence of change-speed gears.

Sutton Bank, the severest hill on the course, was in wonderfully good condition considering all things. It never has a billiard-table surface, but on Saturday the road up it was hard and firm, and a strong south-

In the yard of the Clarendon Hotel, Harrogate, before the start.

Spring Quarterly Trial.—

T. C. Atkinson making a good ascent of Sutton Bank on a three-speed 3½ h.p. New Hudson.

westerly wind blew in favour of the competitors. It rained fairly hard for a few moments as the early arrivals appeared on the scene, but soon cleared up. The men had to cover the journey from the start without dismounting, and so had to take the hill with hot engines. They came up in quick succession, and provided much that was of interest to the spectators who congregated on various portions of this steep ascent. On both the test hills the results given are of those competitors who qualified for a first-class certificate, arranged in order of merit, the first man being nearest to the requisite standard: For machines not exceeding 300 c.c., 15 m.p.h.; for machines above 300 c.c., 20 m.p.h.; passenger machines, 12 m.p.h. The performances are given officially as under:

HEAVYWEIGHTS.—1, B. A. Hill (3½ h.p. Rudge), error 7 secs.; 2, J. Haslam (3½ h.p. Zenith), 7⅖ secs.; , C. S. Burney (3½ h.p. Rudge); 4, E. W. Merrall 3½ h.p. P. and M.), 10⅗ secs.; 5, T. C. Atkinson 3½ h.p. New Hudson), 11⅗ secs.; 6, W. B. Gibb 3¾ h.p. Douglas), 23⅖ secs.; 7, S. Sawer (3½ h.p. Premier), 25⅕ secs.; 8, F. Philipp (3¾ h.p. Scott), 31⅕ secs.

PASSENGER MACHINES.—1, F. Smith (5-6 h.p. Clyno), 10⅘ secs.; 2, E. B. Ware (8 h.p. Chater-Lea), min. 35 secs.

LIGHTWEIGHTS.—1. J. Stevens (2½ h.p. A.J.S.), 0⅖ secs.; 2, H. Stevens (2½ h.p. A.J.S.), 22 secs.; F. W. Taylor (2½ h.p. New Hudson); 4. H. G. Dixon (2½ h.p. New Hudson), 1 min. 10⅘ secs.

Of the other competitors, Allen's Zenith, Patterson's ½ h.p. New Hudson, Butler's Indian, Dixon's 2½ p. New Hudson, the Morgan Runabout (which came so fast it was loudly cheered), Houghton's Bradbury, Gregson's Bat all made excellent ascents.

Of the unfortunates, Bailey (Clyde) and Dover (Triumph) assisted with their feet; and Watson (Kerry), Noble (Rover), Wasling (Enfield), Ellis (Calthorpe), Arter (James), King (Premier), Appleee (Millennium), Hill (A.C.), and Dr. Wilson (P. and M.) dismounted. Squire (Roc) stopped low down the hill on his first attempt. Portwine's (A.C.) passenger jumped out of the tricar in his excitement during a momentary stop. Smith, on the Clyno, made quite a good performance, although impeded by one of the official cars, which had stuck. Considering Applebee's machine was only a single cylinder, it did remarkably well. McManus reported that he was hindered by a horse and cart at the bend, and had to run alongside. Watkins (Premier) and Dover (Triumph) also ascribed their stops to being impeded. Gray (Rudge) pedalled, and Edmond (Premier) suffered a puncture after rounding the bend.

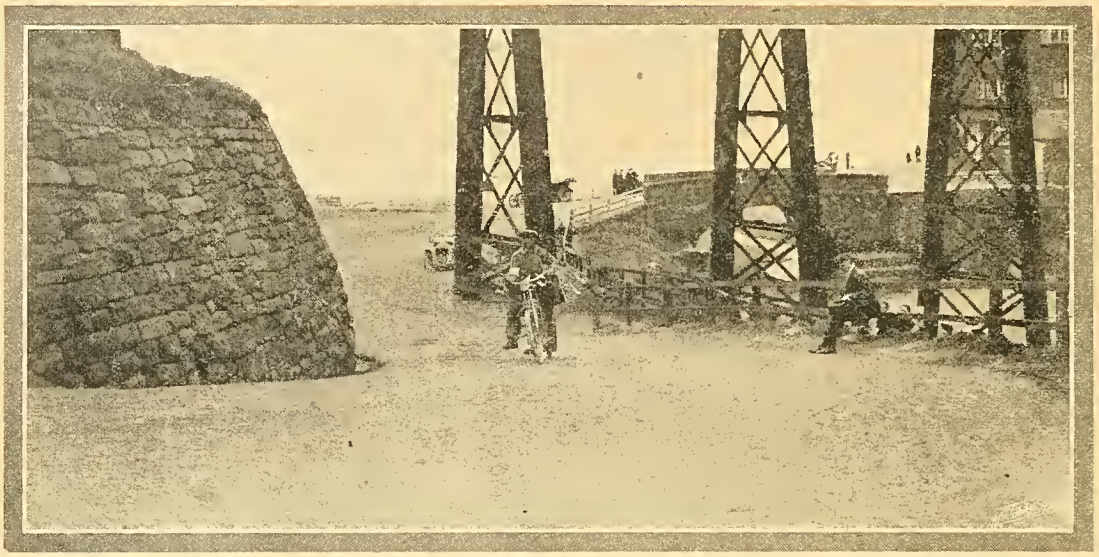
Leaving Sutton Bank with its unhappy reminiscences—to some of the less successful, at any rate—a narrow and lumpy road was followed for a mile or two which eventually became treacherously greasy, rendering the descent of Scawton Bank positively risky. The surface of the road, composed of a red clayey substance, caused many a hair-raising slip, and this ever-tortuous section, which continued for several miles under overhanging trees, proved a perfect nightmare to the riders. C. E. S. Squire (Roc) skidded. The conditions were little improved by the time Rievaulx was reached, and all had crawled along so gingerly that quite a large batch of riders tackled the bank together, thus impeding one another. R. Ellis (Calthorpe) came to a standstill near the top. Helmsley, Nawton, and Kirby Moorside were passed without incident, and it was indeed good to notice the services rendered by the Yorkshire police in guiding the competitors in towns and villages and at cross roads, while the A.C.U. arrow was seldom if ever missing. The scenery in parts was exceedingly pretty, and there is no doubt that in this respect quarterly trials competitors have never on the whole ridden under such pleasant conditions.

Heather-grown Moorlands.

Vast tracks of moorland country were traversed on the way to Sinnington, and one could see the competitors filing along the white strip of road for a couple of miles ahead. An undulating course, including not

At Whitby during the luncheon interval.

Spring Quarterly Trial.—



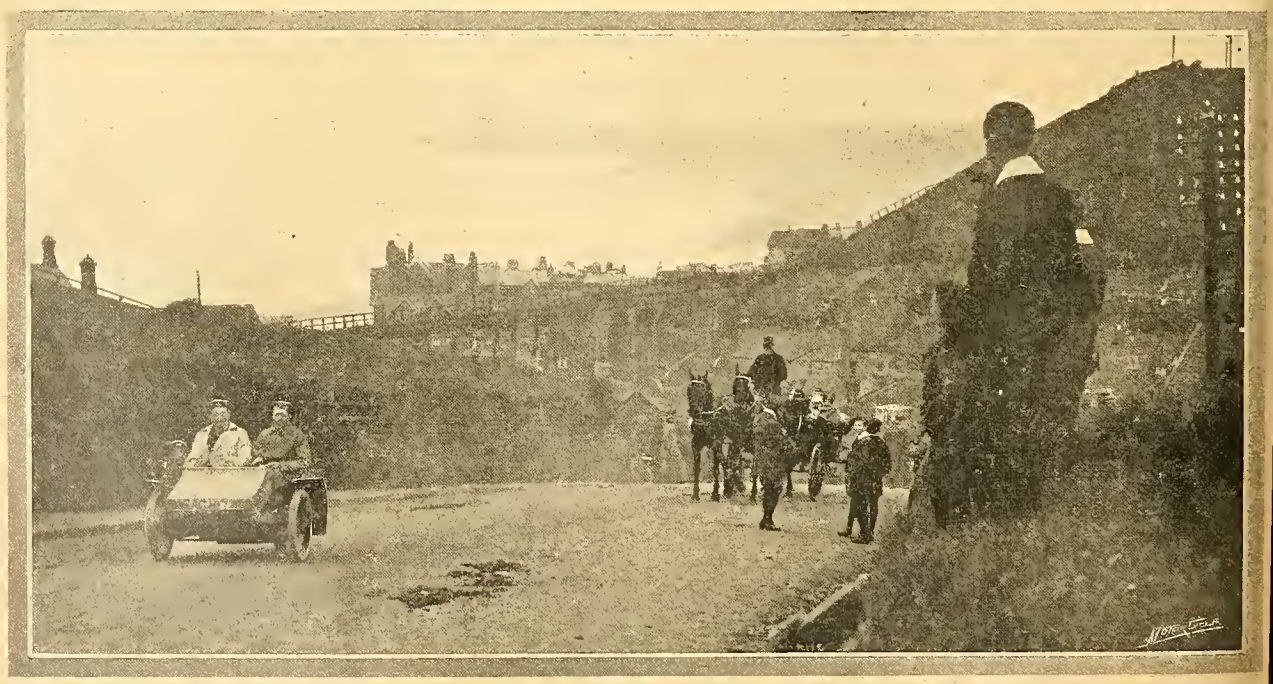
Commencement of the ascent of Lythe Bank, Sandsend. The competitor is D. Robertson (3½ h.p. Wolf with Millennium gear)

a few steep hills, led to the precipitous descent of Blue Bank, near Sleights. In Ruswarp the route suddenly turned to the left, and the winding ascent of Spring Hill caused much engine knocking and low gear work, but, fortunately, no failures. A fair crowd welcomed the riders at Whitby, where lunch was prepared at the Royal Hotel. The sun had meanwhile made a tardy appearance, and the riders were indeed glad of the one and a half hours' rest by the sea which proved all too brief.

Leaving Whitby by the sea front, the riders passed through a toll gate, and in a mile or two encountered a number of hairpin bends, which would put the Devil's Elbow of T T. fame in the background. These called for careful negotiation, and it was necessary to be continually switching on and off until Sandsend was reached, which led to the second hill test.

Lythe Bank is a truly awkward ascent. The competitors struck the gradient without warning, then came two steep portions, the maximum gradient of which was about 1 in 5. The surface on the off side of the road was good but loose on the near side. The length of the timed section was 1,360 yards, measured from the bridge at the bottom to the church. Despite the difficulty of the climb, the machines behaved splendidly. The following are the official results:

HEAVYWEIGHTS.—1, F. Philipp (3¾ h.p. Scott), error 2⅕ secs.; 2, T. C. Atkinson (3½ h.p. New



An A.C. sociable safely over the 1 in 5 gradient of Lythe Bank, Sandsend. Competitors could see this hill in the distance immediately after leaving Whitby.

Spring Quarterly Trial.—

A competitor negotiating the hairpin bend at Dalehouses on the coast ride.

Hudson), 2⅖ secs.; 3, C. S. Burney (3½ h.p. Rudge), 8 secs.; 4, W. B. Gibb (2¾ h.p. Douglas), 10 secs.; 5, B. A. Hill (3½ h.p. Rudge), 12⅗ secs.; 6, S. Sawer (3½ h.p. Premier), 18 secs.; 7, E. W. Merrall (3½ h.p. P. and M.), 30⅕ secs.; 8, J. Haslam (3½ h.p. Zenith), 32⅘ secs.; 9, D. H. Noble (3½ h.p. Rover), 39⅕ secs.

LIGHTWEIGHTS.—1, J. Stevens (2½ h.p. A.J.S.), 27⅘ secs.; 2, H. Stevens (2½ h.p. A.J.S.), 41 secs.; 3, H. G. Dixon (2½ h.p. New Hudson), 57⅞ secs.

PASSENGER MACHINES.—1, F. Smith (5-6 h.p. Clyno and s.c.), 21⅕ secs.; 2, E. B. Ware (8 h.p. Chater-Lea and s.c.), 1 min. 6⅕ secs.

The above mentioned competitors made non-stop runs, but of the others:

Morgan (on the Runabout) came up in splendid form; Wasling (on the Enfield) good; Patterson (3½ h.p. New Hudson), excellent; W. E. Grange (Bradbury), good; Robertson (3½ h.p. Wolf), good; F. Dover (3½ h.p. Triumph), good; G. T. Gray (3½ h.p. Rudge) and C. Bailey (4 h.p. Clyde) on their low gears; C. King (3½ h.p. Premier), excellent; G. A. Gregson (8 h.p. Bat), made a splendid ascent; W. H. Watkins (3½ h.p. Premier), good; H. McManus (3¾ h.p. Scott), good; C. E. S. Squire (5 h.p. Roc), good; A. D. Arter (3½ h.p. James), good; A. C. Robbins (3½ h.p. Humber), good on low gear; J. Portwine and F. Hill (both on A.C. Sociables), good but slow; R. S. Osborne (3½ h.p. Osborne), good; P. H. Allen (3½ h.p. Zenith), good but noisy; W. Houghton (3½ h.p. Bradbury), good; and H. Gibson (3½ h.p. Bradbury), good. R. Ellis (3½ h.p. Calthorpe) pedalled.

Strange to say, there were no failures among the motor bicyclists, and only one in the passenger class. F. W. Applebee again finding his 3½ h.p. J.A.P. engine too small for a double load. Through Hinderwell, the descent of Dalehouse proved another brake test, and also that of Loftus, while the ascent of Brotton might have caught the unwary napping. But it was at Saltburn that the trickiest climb was in store, three hairpin bends providing ample excitement for several hundred spectators who assembled at this point. H. F. S. Morgan was travelling at a great pace, but underestimated his speed, and at the last bend the inside wheel of his runabout lifted, and he crashed into the wall, providentially without damaging any vital part of his machine. Both steering wheels were knocked back several inches, and the axle was badly bent, but despite this *contretemps* Morgan proceeded after effecting slight adjustments. Especially good climbs were made by Sawer (Premier), Philipp (Scott), Arter (James), and Burney (Rudge), whilst Smith (Clyno) received quite an ovation for his fine corner work with his sidecar. Gregson (Bat) broke a belt fastener during the ascent. The road was less interesting to Guisborough, Stokesley, and Ingleby Cross, and nothing of note occurred. P. H. Allen was passed repairing his back tyre, and later Hugh Gibson, Houghton, and Butler in similar trouble. The road surface was far better than on the outward run. At Thirsk tea was provided by *The Motor Cycle* for the competitors. H. G. Dixon had some little difficulty in restarting his New Hudson. After leaving Baldersby, D. Robertson (who had ridden from Ayr on his Wolf to compete) was obliged to stop with a broken magneto bracket. A marshal later undertook to tow him to the finish, but, failing to round a corner, Robertson fell and hurt his knee. In Ripon C. Bailey broke a valve, but nevertheless finished to time.

The villagers turned out in force to see the competitors finish, and much interest was taken in the trial at Harrogate, where crowds lined the streets.

Thus ended what is generally agreed to be the most severe one-day motor cycle trial on record. Many a rider had his eyes opened, and left the district with a profound respect for Yorkshire hairpin bends and steep acclivities.

That excellent sportsman, Major R. L. Nott-Bower, C.M.G., Chief Constable of the North Riding of Yorkshire, who, by the way, is a reader of *The Motor Cycle*, did much good work. He posted his men at all dangerous and doubtful turnings, thus protecting the public and aiding the competitors. A few men were a little nervous because many constables took their numbers, but this was merely for checking purposes.

Frank Philipp (3¾ h.p. Scott) rounding the second hairpin bend on Saltburn Bank. Hundreds of spectators were gathered at the hill summit.

TRIALS TRIFLES.

The most severe course yet arranged for a motor cycle trial was the general opinion.

Only fourteen gained non-stop certificates out of forty-two starters.

Two out of three sidecarists made non-stop runs.

Only one single-geared machine finished with a clean sheet, that honour falling to Shepherd Sawer, of the Sheffield and Hallamshire M.C.C., and his pedalless Premier. A gear of 5½ to 1 was used.

Frank Philipp does not know what it feels like to have a compulsory stop in quarterly trials. He started competing in such events a year last January and has now made six successive non-stops. His two-stroke, two-speed, two-cylinder Scott ran faultlessly.

E. B. Ware completed the 550 miles journey in the M.C.C. London-Land's End trial, used his 8 h.p. Chater-Lea sidecar each day afterwards until starting for Harrogate on Friday, made a non-stop in the Quarterly, and set off for London next morning with R. Surridge as passenger. Nearly 2,000 miles in nine days is probably a record for passenger motor cycles.

The majority of the trade competitors journeyed to Harrogate on steel rails. A few exceptions who travelled by road were: F. Smith (Clyno and sidecar), from Wolverhampton; D. Robertson (Wolf), from Ayr; S. Sawer (Premier), F. Dover (Triumph) and J. Haslam (Zenith), from Sheffield; R. S. Osborne (Osborne), from Lincoln; G. A. Gregson (Bat), from Southport; J. Portwine (A.C.) and F. W. Applebee (Millennium-Jap), from London. Nearly all the competitors returned to their respective homes by road next day.

We learn from local residents that there was a good deal of practising on Sutton Bank last week. One or two motor cyclists who had entered for the trial are said to have found the test hills rather too severe, and on that account refrained from competing.

Saltburn Bank was the tit-bit of the course. There were scores of spectators to see the competitors drop down a hill half a mile distant to the fore-shore and then tackle the three hairpin bends, each of which would place the hairpin corner on Snaefell in the background. It was at this spot that Yorkshire motor cyclists most did congregate.

Quite a number of non-competing motor cyclists journeyed round the course. A good many riders expressed disappointment that the makers of their machines were not represented. For example, there were dozens of Triumph riders at the different points of vantage who must have longed to see their favourite mount perform on the test hills in the hands of the trade riders.

The newcomers performed most creditably. The Rudge trio finished *en bloc*, likewise the two A.J.S. riders, and the four competitors on New Hudsons only experienced one stop between them.

Because only one single-geared mount made a non-stop it must not be considered a proof of the unsuitability of the type for touring in Yorkshire. More than one non-competing machine accounted for all the hills without special preparation in the way of gearing. Other users of single gears climbed both Sutton and Lythe Banks "on the run," but failed owing to some other *contretemps*.

It was not an ideal course for lightweights, although several with change-speed gears made non-stop runs.

The following cars were kindly placed at the disposal of the A.C.U.: S.C.A.T., Vulcan, Belsize, Sunbeam, and Ford.

One of the A.C. sociables was not completed in time to be driven to Harrogate, but in order that it might take part it was put on the train and the finishing touches performed *en route*. But for a momentary stop on Sutton Bank it would have gained a non-stop certificate.

The coast run from Whitby to Saltburn, with all too brief glimpses of the North Sea glistening in the sunlight, was much enjoyed, but a vigilant eye was necessary to negotiate successfully the sudden rises and awkward bends. The road was narrow and very loose on this section.

E. W. Merrall's P. and M. had the cleanest looking engine at the finish.

The lightweight pattern Armstrong-Triplex gear was used on the 3½ h.p. New Hudsons, but both proved themselves equal to the strain.

There were thirty-three variably geared and nine single geared machines in the trial. All the passenger motor cycles were chain-driven. Of the motor bicycles twelve were chain driven, two had combined chain and belt drive, and the remainder were belt-driven. Non-stops were made by ten single and four twin-cylinder machines.

H. F. S. Morgan and his runabout at Thirsk. The front wheels, instead of being four inches in front of the engine, were knocked level at Saltburn, yet the driver completed the course.

TABULATED LIST OF QUARTERLY TRIAL PERFORMANCES AND OFFICIAL AWARDS.

Rider.	H.P. and Machine.	Cyl.	Dimensions.	Capacity.	Gears.	Remarks.
Stevens	2¼ A.J.S.	1	70 × 76	292	2-sp. A.J.S. chain drive	Non-stop. 1st class certificate.
Stevens	2¼ A.J.S.	1	70 × 76	292	2-sp. A.J.S. chain drive	Non-stop. 1st class certificate.
Haslam	3½ Zenith	1	85½ × 85	488	Gradua variable	Non-stop. Failed to climb Sutton at minimum speed.
W. Merrall ...	3½ P. & M.	1	82 × 88	465	2-sp. P. & M. chain drive	Non-stop. Failed to climb Sutton at minimum speed.
W. Taylor ...	2½ New Hudson ..	1	70 × 76	292	3-sp. Armstrong chain dr.	Non-stop. 1st class certificate.
G. Dixon	2½ New Hudson ..	1	70 × 76	292	3-sp. Armstrong chain dr.	Non-stop. 1st class certificate.
S. Burney	3½ Rudge	1	85 × 88	499	2-sp. N.S.U.	Non-stop. Lost certificate owing to magneto being unprotected.
A. Hill	3½ Rudge	1	85 × 88	499	2-sp. N.S.U.	Non-stop. Failed to climb Sutton at minimum speed.
Philipp	3¾ Scott	2	70 × 63½	486	2-sp. Scott chain drive ..	Non-stop. Failed to climb Sutton and Lythe at minimum speed,
C. Atkinson ..	3½ New Hudson ...	1	85½ × 85	488	3-sp. Armstrong	Non-stop. Failed to climb Sutton at minimum speed. Crankease slightly oily.
Sawer	3½ Premier	1	85 × 88	499	Single gear	Non-stop. Auxiliary exhaust and tappet exuding oil.
B. Gibb	2¾ Douglas	2	60 × 60	340	2-sp. chain and belt	Non-stop. Failed to climb Sutton and Lythe at minimum speed.
Smith	5-6 Clyno and S.C.	2	76 × 82	643	2-sp. chain drive	Non-stop. 1st class certificate.
S. Ware	8 Chater-Lea & S.C.	2	85 × 85	964	3-sp. chain drive	Non-stop. 1st class certificate.
T. Gray	3½ Rudge	1	85 × 88	499	2-sp. N.S.U.	Non-stop, pedalled on Sutton Bank.
H. Watkins	3½ Premier	1	85 × 88	499	2-sp. Millennium	Dismounted Sutton Bank.
McManus	3¾ Scott	2	70 × 63½	486	2-sp. Scott chain drive ..	Ran alongside on Sutton Bank.
Portwine	5-6 A.C. Soeiable..	1	90 × 102	650	2-sp. A.C. chain drive ..	Passenger dismounted on Sutton Bank.
T. Allen	3½ Zenith	1	85½ × 85	488	Gradua	2 punctures.
T. Watson ...	3½ Kerry-Abingdon	1	85 × 88	499	2-sp. Kerry chain and belt	Stop for petrol. Gear trouble. Retired.
Patterson, jun.	3½ New Hudson ...	1	85½ × 85	488	3-sp. Armstrong	Choked jet.
T. Noble	3½ Rover	1	85 × 88	499	Single gear plate clutch	3 stops—2 for tyres, 1 Sutton Bank.
Wasling ..	2¾ Enfield	2	54 × 75	343	2-sp. Enfield chain drive	Ran alongside on Sutton Bank.
Ellis	3½ Calthorpe	1	85 × 88	499	Single gear	4 stops—Punctures, failed Sutton and Rievaulx
Dover	3½ Triumph	1	85 × 88	499	Single gear	4 stops—Sutton Bank, 1 plug, 2 belt troubles.
T. Grange ...	3½ Bradbury	1	89 × 89	554	Single gear	Stopped Sutton Bank.
Butler	7 Indian	2	82½ × 93	998	2-sp. Indian chain drive	4 stops—3 sooted plug, 1 puncture.
S. Morgan	8 Morgan Runabout	2	85 × 85	976	2-sp. Morgan chain drive	Replaeed plug, and ran into wall at Saltburn.
Ing	3½ Premier	1	85 × 88	499	Single gear	Dismounted Sutton Bank, ped. Lythe Bank.
Edmond ..	3½ Premier	1	85 × 88	499	Single gear	Punctured Sutton Bank.
Coughton ...	3½ Bradbury	1	89 × 89	554	2-sp. N.S.U.	2 stops—Sutton Bank and puncture.
S. Squire ..	5 Roc	2	75 × 80	707	2-sp. Roc	2 stops—Sutton Bank and side-slip.
Robbins ...	3½ Humber	1	83 × 88	487	2-sp. Roc	Stopped Sutton Bank.
Ibson	3½ Bradbury	1	89 × 89	544	2-sp. N.S.U.	3 stops—2 punctures, and on Sutton Bank.
Gregson ...	8 Bat-Jap	2	85 × 85	964	Single gear	4 stops—3 sooted plugs, 1 belt fastener.
Osborne ...	4 Osborne-Jap ...	1	85½ × 85	488	4-sp. Osborne pulley	1 puncture, assisted with feet Sutton Bank.
Arter	3½ James	1	86 × 96	557	Single gear	Stopped Sutton Bank.
Wilson ...	3½ P. & M.	1	82 × 88	465	2-sp. P. & M. chain drive	Dismounted Sutton Bank and retired.
Applebee..	3½ Millennium and sidecar	1	85 × 85	482	2-sp. Millennium chain drive	3 stops—puneture, stretched valve, shed passenger Sutton Bank, stopped Lythe Bank.
[illegible]	5-6 A.C.	1	90 × 102	650	2-sp. A.C. chain drive ..	Stopped Sutton Bank.
Ibertson ...	3½ Wolf	1	85 × 88	499	2-sp. Millennium	Magneto bracket broke. Retired.
Iley	4 Clyde	1	85 × 85	482	P. & M. chain drive	2 stops—sooted plug and broken valve.

The special stop in the Market Place, Thirsk, for tea provided by "The Motor Cycle."

CURRENT CHAT

TIME TO LIGHT LAMPS

(GREENWICH)

Apr.	27th	8.14 p.m.
,,	29th	8.18 ,,
May	1st	8.21 ,,
,,	3rd	8.24 ,,

Motor Cycle Race at Aston.

At the Rover club race meeting on May 6th, at Aston Lower Grounds, Birmingham, there will be a three miles race for motor cycles with engines not exceeding 76×76 mm. Entry forms can be obtained from Mr. W. B. Goodwin, Victoria Square, Birmingham.

London-Land's End Run.

Notwithstanding the severity of the course, the competitors in the above event have done better than last year as regards errors in time, although in another manner the competition proved a more severe test, as only thirty-three completed the double journey within schedule time out of sixty-nine who started.

Is Stoupe Brow a Fair Test?

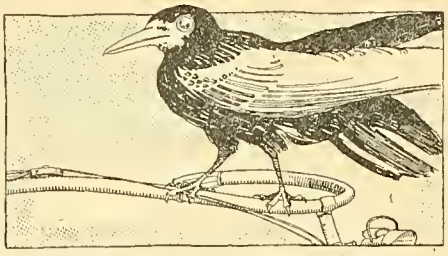
Our local correspondent, who has inspected and tried Stoupe Brew, included in the Six Days' Trials course on several occasions, writes strongly recommending the Auto Cycle Union to cut out this section of the route, as the general opinion is that the test would be an unfair one. Besides, the foot of the hill cannot be reached if it happens to be high tide.

Tourist Trophy Notes.

Messrs. Frank Philipp and Alfred A. Scott, of the Scott Engineering Co., visited the Isle of Man during the Easter holidays with a two-stroke Scott and sidecar, and journeyed over the new course. Mr. Frank Hulbert, of the Triumph Cycle Co., has also been spending the Easter vacation in the Island, and has made arrangements for housing the Triumph team next June. He has chosen the Prince of Wales Hotel, Ramsey, as headquarters, and expects that about ten machines of this make will start in the senior race.

Personally Conducted Hill Tour.

Last week-end G. Edwards, Mottingham, personally conducted a score of motor cyclists for a Kent hill tour, including Crown Ash and Cudham Hills. Bradbury, Triumph, V.S., Bat, and other machines were represented, and R. G. Cowley, Blackheath, owner of a Targa Floria racing Sizaire, took part. The machine, though rated as 6 h.p., develops over 16 h.p., and has a top gear of two to one. It was, however, too highly geared for such hills as Crown Ash, and stopped at the second bend. Edwards and Cooper made fastest climbs. An Eltham rider made a clean climb on an 89×89 mm. Bradbury, of which he only received delivery last week. A Bat rider charged the hedge and fell, and several others failed at Crown Ash. Mr. Cowley has two Sizaires, and is to contest a private match with the rider of a Bradbury motor bicycle at Brooklands shortly.



Herts County A.C. Open Hill-climb.

The Herts County A.C. open hill-climb, fixed for May 6th, is divided into two sections, A and B. A is open to all types of motor cycles, division B to riders who have not won a prize in an open hill-climb. There are ten classes in division A embracing every type of motor cycle, and including a flexibility test. In division B there are nine classes, the one for passenger machines being omitted.

B.A.R.C. Race Meeting.

The next B.A.R.C. race meeting will be held on Wednesday, May 10th, when there will be two events for motor cycles. The Short Motor Cycle Handicap for all classes of motor bicycles, distance about 5¾ miles, and the Long Motor Cycle Handcap, distance about 8½ miles. The prizes in both events are: Winner 10 sovs. or cup at option; second, 5 sovs. or cup at option; third, 3 sovs. or cup at option. Entries close Saturday next, the 29th inst., and must be sent with entry fee, 10s. 6d. for each event, to the B.A.R.C., Carlton House, Regent Street, W.

Second Meeting of the B.M.C.R.C.

Yesterday (Wednesday) the B.M.C.R.C. second meeting of 1911 was down for decision. There were four entrants in the Junior T.T. Race, H. A. Collier riding a Matchless-Jap of limit size with cylinders 60 × 60 mm. Fourteen had entered for the four-lap Relay Race. There were twenty-four in the One Hour Senior T.T. Race, including the previous winner, S. T. Tessier (twin Bat-Jap), all the noted Rudge-Whitworth riders, C. R.

SPECIAL FEATURES

The Quarterly Trials in Yorkshire
The Balancing of V Twin Engine
First Piston Valve Motor Cycle Engi
Experiences in the Ladies' Competiti

Collier (Matchless), McNab (Trump-J and W. F. Newsome (Triumph), wh seldom seen in track racing events. last race premised to provide some racing.

Results of the Quarterly Trial in Y shire.

The official results of last Saturd Quarterly Trial are given in this i The severity of the course and condi will be gathered from the fact that six competitors gained first-class ce cates of the fourteen who were cre with non-stop runs.

Petrol Consumption Trial in S. Austral

The South Australian M.C.C. hel first petrol consumption test on M 18th over a course which compris representative hill as met in ord touring conditions; the course had covered four times, making a total tance of thirty miles. The results culated according to amount of used and total weight carried, 1, M. Saunders (4½ h.p. No 380 lbs., 103 points; 2, W. Cou (3 h.p. Lewis), 332 lbs., 102; 3, Torode (3½ h.p. Lewis water-co 415 lbs., 100. S. G. Wadey (2½ h. and M.) did greatest mileage per g viz., 153 miles.

1,882 Miles in Six Days.

We are in a position to inform readers that a well-known motor c will start on Monday next to atten break the long-distance record wh now held by A. E. Catt. It w remembered that Mr. Catt rod Triumph an average distance o miles a day for six days during th week of November last. It should comparatively easy matter to impro these figures at this time of the when the days are long and the good. We expect to publish furthe ticulars and details next week.

SURVIVORS OF SATURDAY'S QUARTERLY TRIAL.

Twelve of the fourteen competitors who made non-stop runs.

W. Phillpott (2 h.p. Humber), winner of the tweight class in the Shap Fell Open Hill Climb.

range Suggestion.

ere is a proposal in the States to rate records created on chain and driven motor cycles.

her Test Hill.

hear of another test hill that has "discovered" in remote country Tonbridge. It is said to totally e Crown Ash Hill for severity.

ead and Side-by-side Valves.

noticed on Easter Monday that ab has returned to side by side s for his Brooklands Trump-Jap. laims to obtain better results with tter type.

ichmond Meeting of Motor Cyclists.

ies of the photograph of the Rich- group which appeared on page 404 r last issue may be obtained from . Straker, 12, Percy Street, Hull. 1s. 6d. mounted and 1s. unmounted. ree.

n-Land's End Run.

F. Halsall, who had entered for the run on a 5-6 h.p. Clyno and side- as disappointed in the delivery of his nount, and participated in the run non-competitor. His mount was a . Matchless, but finding the weight ecar and passengers and the steep ather too much for a single-geared cylinder, he relinquished the com- n at Chard. H. J. Cox writes that pleted the outward journey without any pedal assistance to his 2¾ h.p. eed Forward. His failure to qualify return journey was caused by tyre e. W. H. Elce rode a 3½ h.p. and not a 5 h.p. Rex.

ed Motor Cycle Show for Scotland.

roposal is afoot to include a motor ection in next year's Scottish Motor which is to be held in Glasgow uilding retained from the Scottish tion to be shortly opened. This g has a floor space of nearly 75,000 feet, and there should be no diffi- n finding space for a representative of motor cycles. So far there has been a purely motor cycle show in nd, and both local riders and traders give their support to an event could not fail to stimulate the rapidly growing movement over order. The Scottish A.C. has d the use of the building.

Police Traps.

There is a furlong trap in Park Lane, beginning about 300 yards from the Marble Arch. Proceedings are taken if speeds are judged to be in excess of twenty-three miles an hour.

A trap is being worked on the main Glasgow-Edinburgh Road between the last two milestones before reaching Kirtle Bridge when travelling towards Ecclefechan. Motorists are being stopped at the end of the bridge.

We advise special caution on the Folkestone Road at High Road, Lee, and the Sevenoaks Road, between the tram terminus, Catford, and Southend village. Several motor cyclists have been stopped at both places, and trapping is likely to be continued at the week-ends at both places. The holiday "bag" at the first-named trap was a very heavy one, but in view of the repeated warnings that have appeared of this trap it is really the motorist's own fault if he does not proceed with that degree of caution which the known activity of the police renders expedient. From information received we should strongly advise motor cyclists not to essay trials at Westerham Hill at the week-ends.

FUTURE EVENTS.

Apl. 29.—Bristol B. & M.C. Open Hill Climb.
May 3 —Surrey v. Hants Inter-county Hill Climb.
" 6.—Herts. County A.C. Open Hill Climb.
" 27.—Herts. County A.C. Open Speed Trials.
June 2-5.—M.C.C. London-Edinburgh Run and and Return Journey for the M.C.C. Challenge Cup.
" 10.—Birmingham M.C.C. Open Hill Climb, Shelsley Walsh.
" 17.—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
" 30.—Junior Tourist Trophy Race in the Isle of Man.
July 3.—Senior Tourist Trophy Race in the Isle of Man.
" 4.—Kilometre Speed Trials on Douglas Promenade, Isle of Man.
" 8 —A.C.U. Metropolitan Centre Eliminating Trial for Club Championship

Reliability Trial at Marseilles.

The flying kilometre races at Hyères on the 9th inst. were preceded by a motor cycle trial from Marseilles to Hyères and back. The following machines took part: Magnat-Debon, Alcyon, and Regence.

The Motor Cycle in New Zealand.

One of our numerous New Zealand readers informs us that a Triumph sold at £55 in England costs £80 in New Zealand, while a £12 12s. or £14 14s. sidecar costs £25 or thereabouts. "The roads here," he adds, "are flat for miles, and it is an ideal motoring country."

Liverpool Police Vindicated.

In our Club News pages last week, the hon. secretary of the Liverpool A.C.C. warned motor cyclists residing in or near Liverpool and Birkenhead that the police in those districts were very active, and that five members of his club had been summoned for various offences against the Motor Car Act within a week. A correspondent named S. W. Phillpott has taken up the cudgel on behalf of the police, and points out that the accusations made against the police are misleading. He says the members who were summoned were all guilty of offences against the law, and although it may be unlucky to be caught without a light, or to leave one's driving licence at home, both offences are illegal. Our correspondent thinks that the accusation that the police are acting unfairly or in an arbitrary manner is not true, and should be corrected.

THE SPRING QUARTERLY TRIAL.

A view from the portico of the Royal Hotel, Whitby

AWARDS IN THE LONDON-LAND'S END RUN.

WINNER OF THE JARROTT CUP.

	Error of time.
A. J. Moorhouse (7 h.p. Indian)	2m. 32s.

WINNER OF LIGHTWEIGHT PRIZE AND GOLD MEDAL.

W. B. Gibb (2¾ h.p. Douglas)	2m. 35s.

WINNER OF SIDECAR CUP.

Frank Smith (5-6 h.p. Clyno and sidecar)	32m. 38s.

WINNERS OF GOLD MEDALS.

	Error of time. M. S.		Error of time. M. S.
Eli Clark (2¾ Douglas)	2 50	P. G. James (3½ J.A.P.)	8 30
G. T. Gray (3½ Rudge)	3 0	S. Perryman (3½ Ariel)	9 20
S. G. Frost (4½ Minerva)	3 23	W. H. Elce (3½ Rudge)	9 22
E. Gwynne (3½ Triumph)	3 38	G. Lee-Evans (7 Indian)	10 26
B. A. Hill (3½ Rudge)...	3 59	D. Baddeley (7 Indian)	10 35
W. Pratt (3½ P. & M.)...	4 36	E. Babbington (3½ J.A.P.)	11 6
G. Brough (3½ Brough)	5 9	L. Baddeley (3½ Brown)	12 6
W. Douglas (2¾ Douglas)	5 23	F. Applebee (3½ N.S.U.)	12 57
E. Kickham (2¾ Douglas)	5 57	A. Brittain (3½ Bradbury)	12 58
P. Phillips (2¾ Douglas)	6 15	A. Stanton (3½ Bradbury)	14 18

WINNERS OF SILVER MEDALS.

V. Olsson (8 Oxted-Jap.)	A. C. Robbins (3½ Humber)
H. Karslake (4 Dreadnought)	A. J. Sproston (3½ Rudge)
J. R. Haswell (3½ Triumph)	A. H. Forbes (3½ Triumph)
A. Peppercorn (3½ Bradbury)	S. Wright (3½ Humber)
R. C. O. Wells (3½ Bradbury)	F. C. Poecher (3½ Triumph)

RESULT OF THE SHAP FELL OPEN HILL-CLIMB.

The Westmorland Motor Cycle Club's open hill-climb on Easter Monday was described in our last issue (page 406). The course measured 1⅓ miles. The day was windy, with showers in the early morning. One hundred and fifteen competitors entered, competing for prizes value £45.

CLASS II.—Single cylinders, any weight, any capacity. Fifty-three entries.

	Secs.	Fig. merit.
1. F. W. Barnes, Surbiton (2¾ Zenith) ...	123 ...	110.3
2. H. D. Dixon, Birmingham (2¾ New Hudson)	116 ...	122.1
3. F. W. Taylor, Ripon (2¾ New Hudson)	116 ...	122.6
4. F. Turvey, jun., Sunderland (3½ Triumph)	98 ...	139.3
5. P. Brewster, Edgbaston (3½ Norton) ...	93 ...	144.1
6. W. E. Grange, Harrogate (3½ Bradbury)	106 ...	148.1

In this class W. F. Newsome (Triumph) made fastest time—90 seconds.

CLASS III.—Twins, any weight, any capacity. Sixteen entries.

1. H. Mason, Wallsend (6 Matchless) ...	89 ...	175.6
2. F. W. Barnes, Surbiton (6 Zenith) ...	94 ...	180.9
3. J. W. Nelson, Kendal (4 Scott) ...	121 ...	199.6
4. G. A. Gregson, Southport (9 Bat-Jap) ...	84 ...	202.5

CLASS IV.—Members' single cylinders. Twenty-five entries.

1. †W. Woolley, Bowness (2 Humber) ...	158 ...	128.7
2. W. Westwood, Kendal (3½ Triumph) ...	92 ..	146.2
3. E. M. Gregson, Southport (3½ Triumph)	100 ...	149.5
4. P. E. Tolfree, Edinburgh (3½ Matchless)	126 ...	150

W. Westwood (3½ Triumph) won Triumph gold medal for fastest time—92 seconds—by a members' Triumph.

CLASS V.—Members' twins, any weight, any capacity. Eleven entries.

1. E. Jeffreys, Kendal (5 Indian)	103 ...	178.9
2. J. W. Nelson, Kendal (4 Scott) ...	124 ...	205.1
3. ‡G. A. Gregson, Southport (9 Bat-Jap)...	88 ...	212

The winner of Humber gold medal for best performance for lightweights was S. W. Phillpott (2 h.p. Humber).

†Winner of award for best A.C.U. performance of a member who has not previously won a prize.

‡Winner of Zenith gold medal for fastest time in members' class.

E. W. Sharpe won medal for fastest time in open classes.

E. W. Sharpe and G. A. Gregson tied for fastest time in both the open and the members' classes.

RESULTS OF THE HARROGATE TOU AND LADIES' COMPETITION.

HERTS COUNTY A.C.

Rider and Machine.	Marks Lost. Out-ward.	Hill-climb.	Home-ward.	Awards.
A. N. Gutteridge (3½ Triumph)	8	100	1	Silver meda (Class 3)
H. O. Dunn (3½ Triumph) ..	16	2	5	Bronze me
L. S. Dunn (3½ Triumph) ..	14	4	5	Bronze me
Mrs. Wade (3½ Scott)	Outside time			Lady's sou
F. J. Beard (3 Wanderer) ..	42	—	2	Bronze me
E. G. Birch (3½ Scott)	3	10	4	Silver med
Mrs. M. C. Cooke (3½ Triumph)	3	5	1	Silver cup
F. A. Hardy (5 V.S.)	Outside		6	
C. C. Cooke (3½ Triumph) ..	4	—	3	Silver cup
G. S. Carter (5 Matchless) ..	1	2	2	Silver cup
E. C. Jarvis (3½ Triumph) ..	7	2	3	
H. Lister Cooper (3½ Triumph)	10	—	1	Silver med
E. A. Colliver (3½ Zenith) ..	2	2	2	Silver cup
S. T. Tessier (5 Bat)	2	7	2	Silver med
Capt. Seymour (3½ Triumph)	4	4	11	Silver med
Bert Yates (3½ Humber)	18	3	4	Bronze me
W. Cooper (3½ Bradbury) ..	1	6	24	Bronze me
H. Greaves (2½ Enfield)	10	—	77	Silver med
J. S. Harwood (3 Wanderer)	Outside time			
C. M. Down (5 Indian)	Non-starter			

The marks lost by the nine best riders in each section we Outward, 49; hill-climb, 19; homeward, 30.

NORTH-WEST LONDON M.C.C.

A. J. Dreydel (3½ Premier) ..	3	3	3	Silver cup
E. G. Westacott (3½ Triumph)	8	100	5	Bronze me
S. H. Asling (3½ Bradbury)	5	1	3	Silver cup
G. E. Purchase (3½ Triumph)	5	4	13	Bronze me
R. L. Printz (5 Bat)	—	5	5	
G. H. Hollis (2¾ Douglas) ..	Retired			
H. J. Pooley (3½ Premier) ..	5	3	5	Silver cup
Hal Hill (5 Bat)	3	2	3	Silver cup
G. Rowden (3½ Triumph) ..	8	4	3	Silver med
R. C. Davenport (3½ Triumph)	23	100	17	Bronze me
H. C. Bean (6 Matchless) ..	5	16	4	Bronze me
A. S. Phillips (V.S.)	10	100	17	Bronze me
J. W. Thomas (2¾ Douglas)	7	6	30	Bronze me

The marks lost by the nine best riders in each section we Outward, 52; hill-climb, 138; homeward, 44.

NORTH MIDDLESEX M.C.C.

Miss Hammett (2¾ Douglas)	46	100	8	Bronze me
G. L. Fletcher (2¾ Douglas)	37	5	7	Bronze me
W. S. Bennett (3½ Bradbury)	2	1	6	Silver med
T. A. Brown (3½ Rudge)	9	8	28	Bronze me
D. G. Blakey (3½ Bradbury)	6	100	43	Bronze me
A. V. Deacock (3½ N.L.G.) ..	14	1	2	Bronze me
Miss Berend (3½ Brough) ..	4	11	6	Silver me
N. C. Dear (2 Humber)	44	100	9	Bronze me
S. F. Garrett (5 Indian)	5	—	3	Silver cup
H. C. Mills (3½ Premier)	15	100	6	Bronze me
J. V. Robinson (2¾ Douglas)	29	8	7	Bronze me
S. B. White (1½ Wanderer) ..	Out-side time	100	39	

The marks lost by the nine best riders in each section we Outward, 121; hill-climb, 234; homeward, 54.

Holders of the "Service" Challenge Cup for 1910:
Herts County A.C., 1st.
N.W. London M.C.C., 2nd.
North Middlesex M.C.C., 3rd.

THE FIRST LADIES' COMPETITION.

Rider and Machine.	Marks Lost. Out-ward.	Home-ward.	Total.	Awar
Mrs. M. C. Cooke (3½ Triumph) ..	3	1	4	*The M Cycle*
Miss L. Berend (3½ Brough)	4	6	10	Souve
Miss R. Hammett (2¾ Douglas) ..	46	8	54*	Souve
Mrs. A. B. Wade (3½ Scott)	Outside time†			Souve

* Tyre trouble. † Carburetter and tyre troubles.

CLUB NEWS.

Opening run of the Leven and District M.C.C. to Pitlochry and back, a distance of 130 miles.

M.C.U.I. (Ulster Centre).

An open hill-climb was held last week at Bangor, the ent being divided into two classes—A open, and B ricted to private owners. In both clases J. Martin (3½ Triumph) proved an easy winner.

S.E. London M.C.C.

Members and motor cyclists in South London are minded that the open hill-climb, originally fixed for April , has been postponed to May 13th. Entry forms will sent on application to V. Edwards, 9, Honor Oak Park.

Durham and District M.C.C.

he result of the Easter Monday reliability trial, which run under severe weather, to Alston *viâ* Killhope is T. Smith (T.T. Triumph) and (2) G. Sanderson (3½ h.p. erva). These were the only competitors to complete course of twelve starters.

Northamptonshire M.C.C.

flexibility hill-climb was held on Easter Monday at Bridge, and the Rev. B. H. Davies officiated as starter. R. W. Manning as timekeeper.

Class 1 for singles the results were: 1. W. Lees Triumph); 2. S. J. Pilgrim (1911 Hobart).

ass 2 (open to any machine): 1. W. H. Duke (1910 mph); 2. A. T. Coker (1911 Douglas).

Western District M.C.

e following results of the flexibility hill-climb on Dash- Hill have been confirmed.

CLASS I.—Single-cylinder Machines.

	Difference in Time.
1. C. G. Bell (3½ h.p. Norton)	4m. 1⅘s.
2. H. Martin (3½ h.p. Triumph) ...	3m. 4⅖s.
3. T. F. Stallabrass (3½ h.p. Triumph)...	2m. 42⅖s.

CLASS II.—Multi-cylinder Machines.

1. W. F. Ritchie (5 h.p. N.S.U.) ..	2m. 9⅕s.

Westmorland M.C.C.

The reliability run for the Quirk challenge cup takes place on the 30th inst.

Mr. H. B. Harrison, Queen's Road, Kendal, has been appointed hon. trials secretary.

Purley and District M.C.C.

A party of members enjoyed a tour to Land's End over the Easter holidays, and on the Saturday, being in advance of the M.C.C. riders, came in for unexpected ovations from crowds assembled in the various towns on the route.

Birmingham M.C.C.

The opening hill-climb will be held on Saturday next, on a hill of which the name will be kept secret until Saturday. The start will be from Victoria Square at 2-15 p.m., and for the benefit of late comers, a member will be in Victoria Square up to 3 p.m. to inform them where to go. The competition is open to four classes, viz., lightweights, single-cylinder, twins, and passenger machines.

Walthamstow M.C.

A non-stop and speed-judging competition was held on Saturday, 22nd inst., the course being thirty miles timed at a secret milestone, starting from Woodford to Dunmow. The result was as follows: 1. H. T. Browett (8 h.p. Minerva); 2. A. G. Peppercorn (3½ h.p. Bradbury); 3, F. A. Applebee (3½ h.p. Zenith and sidecar). The annual Dinner Cup competition is fixed for May 7th.

Norwich and District M.C.C.

The annual 100 miles reliability trial for the Thorn Cup was held on Easter Monday over a circular course of 25 miles, which had to be covered four times, with a five minutes stop in the third round. Out of twelve starters two only failed to make a non-stop run, and the task of finding the winner proved a difficult one. After due consideration by the judges the result was as follows: 1, F. Peed (2¾ h.p. Wanderer); 2. H. Chapman (2¾ h.p. Douglas); 3. L. B. Colman (3½ h.p. T.T. Triumph).

bers who part in the erfield and ct M.C.C. to Matlock.

Club News.—

Lincolnshire A.C.

The opening event of the Lincolnshire Automobile Club (motor cycle section), which took place on Easter Monday on the North Hill, at Leadenham, was an unqualified success. The hill is about half a mile in length, with an average gradient of about 1 in 8, and portions of 1 in 5½. The entry was exceedingly promising for a club which was only formed in February last, and much enthusiasm was evident in both competitors and spectators, of whom a large number had assembled to witness the sport. The winners on formula in each class were as follows :

Class I. (single-cylinder).—J. E. Harston (4 h.p. Campion-Jap).

Class II. (multi-cylinder). — G. Williamson (8 h.p. Bat-Jap).

Class III. (three years old and over).—A. B. Goold (5-7 h.p. V.S.)

Fastest time of the day was made by G. Williamson, on his three year old 8 h.p. Bat-Jap. The winner of the Wright challenge vase, offered for the best performance of the day, has not yet been decided upon, as the first competitors came very close together.

Motor Cycling Club.

The rules and conditions for the London-Edinburgh run have now been sent out, and the trials hon. secretary, Mr. H. G. Bell, 3, Granville Road, Finchley, N., will be pleased to receive entries as early as possible.

Herefordshire A.C.

About the end of August a car and motor cycle gymkhana will be held, in which several of the events will be of an open character, and some of a novel and interesting type. In connection with this it has been decided to offer the 100 guinea Herefordshire Challenge Cup as the principal event for a two days' reliability trial for light motor vehicles under 6 cwt. built on motor cycle lines. It is proposed that the routes shall be for the first day a run from London to Hereford, and for the second day from Hereford to Birmingham and the Midlands and back.

North Staffordshire M.C.C.

At this club's hill-climb, held in the Buxton district on Easter Monday, there was a large attendance and very good sport. H. R. Wellings (6 h.p. Dot-Jap) won the captain's medal for the fastest time, D. C. Bolton (T.T. Triumph) being very little slower. Each competitor was allowed two attempts, and the result was based on A.C.U. formula.

Rider and machine.	Capacity.	Figure of merit.	Plus scratch.
T. Bentley (3½ Bradbury)	554		
Disqualified. Entered as 87 × 87 mm.			
J. A. Prendergast (3½ Rudge) ...	499	76.20	+11 3/10s.
D. C. Bolton (3½ Triumph) ...	499	83.13	+3s.
A. Miller (3½ Triumph)	499	83.13	+19⅕s.
H. Wellings (6 Dot-Jap)	770	99.3	Scratch
R. T. Ashton (2¾ Douglas twin)...	340	99.9	+41 3/10s.
W. Higson (2¾ Douglas twin) ...	340	107.3	+47⅘s.
G. Wood (7 Peugeot twin) ...	940	149.8	+8⅗s.
C. Edwards (3½ Rudge)	499	Failed.	

A protest was lodged against Bentley's machine, which was upheld.

Barnoldswick and District M.C.

The opening run of this club was held on April 9 starting from Dam Head for Cross Streets *viâ* Hellifi and Settle, where dinner was very kindly provided for t members by the president, Mr. B. Holden. In the aft

[*Photographer, Buck, Ilkl*

Inaugural run of the Ilkley and District M.C.C. at Eastertide.

noon Bucker Brow was climbed by all the members pres A hearty invitation is given to all motorists in Skip Earby, Nelson, and Colne, to join this club. Applicati should be sent to the honorary secretaries, Messrs C. Broadhead and A. T. Elmer, Seven Stars H Barnoldswick.

Liverpool A.C.C.

The above club has arranged a run to Shrewsbury on 30th inst. Meet 10.30 a.m. boat for Birkenhead. Any spective members are cordially invited.

Bolton and District M.C.C.

A speed-judging contest will take place on April over a twenty mile course from Crofters, Bolton, to Cho Town Hall and back to Crofters. Watches and s indicators will be barred. Competitors meet at Crof 2.30 prompt.

Sutton Coldfield A.C.

The club reliability trial for motor cycles, open to no and amateurs only, was held on the 23rd inst. There eight entries, and six started. All climbed Sunrising, failing on Edge Hill. Silver medals were awarde Howard Smith (3½ h.p. T.T. Triumph) and L. F. H (3½ h.p. Mist), who scored full marks. Bronze m to N. Crozier (3½ h.p. Triumph) and H. Goldman (7 Rex) who lost marks but made non-stop runs.

Cork and District M.C.C.

The club held a reliability trial on Easter Monday bet Cork and Longane Bara and back. Fourteen riders part, and the results were as follow :

1. R. Atkinson (3½ h.p. Triumph).
2. J. Healy (3½ h.p. Rudge).
3. S. R. Hosford (2¾ h.p. Enfield).

Oxford M.C.C.

The quaint and picturesque village of Bibury, in Cotswolds, was the venue of the club's first social which took place on Good Friday. The day was enjoyed, and most of the party after tea continue run through the Stroud Valley to Birdlip Hill. A similar run is being arranged for the 1st of May, a May 4th there will be an invitation run to Wantage.

Opening meeting of the newly-formed Hampshire Motor Cycle Union at Bishop's Waltham.

The First Piston Valve Motor Cycle Engine.

THE accompanying sectional drawing of the improved slide or piston valve mechanism which is applied to the motor cycle, illustrated in *The Motor Cycle* of March 23rd, brings out more clearly the construction and operation than was possible with only a photograph of the completed machine such as was shown at that time. Fig. 1 shows clearly the offsetting of the valve piston from the line of the half-speed valveshaft, the peculiar admission and exhaust port arrangements, and method of operating the auxiliary valve ring. As the description which I gave in my former letter, when used in connection with this sectional drawing, covers the construction and operation quite thoroughly, I will only refer briefly to its action for the benefit of any reader who may not have seen that letter.

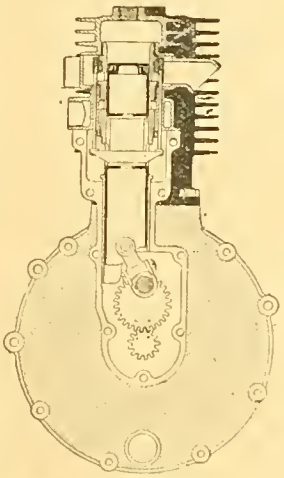
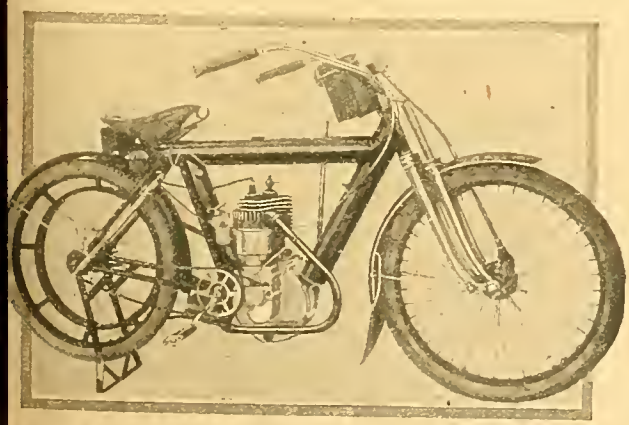


Fig. 1.—Part sectional drawing of Osborn's piston-valve air-cooled motor cycle engine.

The Action of the Valve.

The valve piston is shown in the position it assumes with the main engine piston at the top of its compression stroke, and the compressed charge fired, so that when the engine piston reaches the bottom of its stroke this valve piston would have reached about half-way down in its movement and started to uncover the upper (exhaust) port. When the engine piston reaches the top of the stroke, the valve piston has moved just far enough to commence to open the lower (inlet) ports, but not, as might be expected from the fact that the valveshaft turns one-half as fast as the engine-shaft, the bottom of its stroke, due to the peculiar effect of the offset position of the valveshaft in relation to the valve piston pin. This offsetting of the valve piston makes the lower port remain open during the suction stroke, and causes the valve piston to make a relatively quick movement upward during the upward movement of the engine piston on the compression stroke, so that at the end of that stroke the parts are again in the positions shown and ready to commence a new cycle of operations. It is obvious that, as at certain times both exhaust and inlet ports are opened by the valve piston, provision must be made for preventing the exhaust being drawn back into the cylinder or the charge which is being compressed of passing out of the exhaust port, and for this purpose a light auxiliary ring valve is provided, which is worked by the valve piston coming into contact with a light cross piece, which is connected with the ring by two small rods, near the end of its stroke. Although it might be considered that this method of operating the auxiliary ring would be noisy, in practice it has not proved to be so, and when one considers the light weight and relatively low speed of the parts and the fact that certain cushioning materials can be provided, it will be seen that there is good reason for its silence. Other methods of operating this valve may be used if desired, but the one shown has proved quite satisfactory.



The piston-valve engine and motor bicycle referred to by A. E. Osborn.

Alternative Designs.

This mechanism is only one of several types that the writer has devised and which might also be suited for motor cycle work. In one of these forms the position of the ports has been reversed, the inlet port being first passed by the main valve instead of the exhaust port, and the expanding charge is retained from passing into the inlet chamber by the auxiliary valve ring, which is in the induction chamber instead of the exhaust chamber, and does not come into contact with the exhaust gas heat. In another form the main valve is in the form of a hollow sleeve with the engine piston reciprocating therein, the auxiliary valve being operated by the movement of the main valve, so that in principle of operation the mechanism is exactly the same as the previously described motor cycle engine. In still another form, the main valve is arranged in the cylinder head and connects through a sliding tubular rod at the side of the engine cylinder, which has an arm connecting with the valve, to the valve-operating connecting rod. This gives a spherical combustion chamber in combination with the piston valve arrangement.

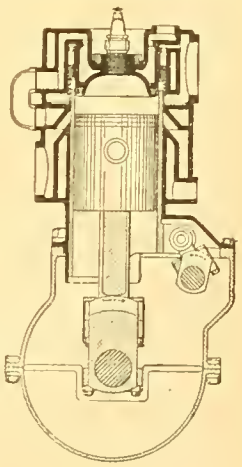


Fig. 2.—Drawing of an alternative design for water-cooled cylinders.

Fig. 2 shows my mechanism in the sleeve form. In this case a water-cooled cylinder is used, and the design should prove of interest, as, having but one sleeve, it is, in my opinion, an improvement on other sleeve valve mechanisms, as it not only has the advantage of greater simplicity, but it is also for that reason cheaper to make. Further, it is easier to cool, owing to the exhaust escaping *via* the port which surrounds the cylinder.

A. E. OSBORN.

Sproston's 1911 Mount.

A. J. Sproston informs us that he will ride a 3½ h.p. Rudge-Whitworth this year in the senior T.T. race, Six Days' Trials, and other important events.

A Northern Depot.

David Moseley and Sons, the well-known tyre manufacturers of Manchester have opened a depot at 44-46, Highbridge, Newcastle-on-Tyne, to cope with their rapidly increasing trade in the North.

A 345 c.c. Record Broken.

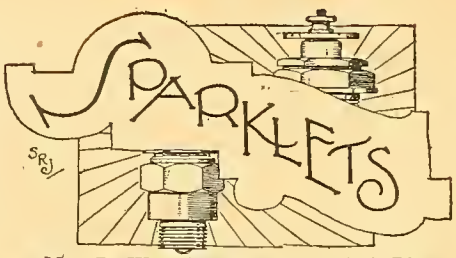
Harry Martin's 2¾ h.p. Martin-Jap was equipped as follows when he broke the mile standing start record at Canning Town: Amac carburetter, Continental tyres, Dunlop belt, Wakefield oil, and Shell motor spirit.

Catalogue Received.

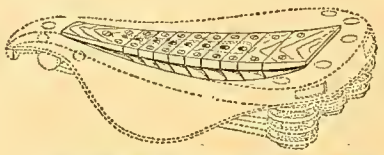
We have received a conveniently shaped catalogue from Messrs. H. Taylor and Co., 21a, Store Street, London, W.C., which is an exhaustive compendium of all accessories and specialities made for the use of motor cyclists. The booklet will be found to be most comprehensive in the variety and number of the useful articles described and illustrated.

A New Sparking Plug.

A new plug which we have used with great success is the Nelson, sold by Mr. A. Simmonsen, 3, Budge Row, Cannon St., E.C. It is well made and excellently finished. The end of the procelain is well recessed in the body of the plug, but the points project far enough into the combustion chamber to ignite the charge readily. The plug is therefore designed for efficiency, and is non-sooting. It is small and neat-looking, admirably adapted for motor cycle work, and is sold at a moderate figure.



Mr. J. W. Richardson, 32, Red Lion Street, Clerkenwell, E.C., is the inventor of a device for obviating perineal pressure in a motor cycle saddle. This device consists of a shaped wooden tree, weighing from one to one and a half ounces. It is cross-cut in a number of sections, and each section is attached to the leather by means of a countersunk screw. The body rests on the



A specially-shaped saddle with wooden support to prevent the centre rising.

flexible portion of the saddle, and the weight causes the section to open, and allows any amount of downward movement, but the tree prevents the leather portion from rising, thus obviating any pressure on those parts of the body where its effect would be harmful. A complete saddle fitted with this device may be obtained from Mr. Richardson at the above address.

Lubricating Oils for Racing.

Wakefield-Castrol oils are favoured several well-known racing men at Brooklands. F. W. Barnes and O. C. Godfrey among others, both use this brand, and have already scored one or two trade wins.

A Tyre Firm's Offer.

The Coventry Rubber Co., Coventry are offering fifty of their modèle de luxe tyre covers at under cost price to riders of single-cylinder machines who will run them and give an opinion regarding their non-skidding properties, resiliency, and wear.

Some Service Novelties.

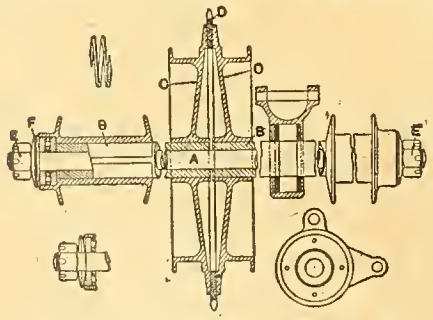
We are in receipt of a very neat tyre repair outfit, the Vulco, which is sold by the Service Co., Ltd., 292-293, High Holborn, W.C. Yet another useful tyre accessory which is sold by the same company is Bond's Plugite—a preparation for stopping the cuts and gashes in motor cycle tyres. Radiblac is a preparation also supplied by this well-known firm for treating rusty and dirty cylinders, and it is claimed to keep the engine cool, and is said to be quite unaffected by rain or oil.

Soldering at Home.

A neat soldering medium which we have used for some time and found to be quite successful is Fluxite, made by the Auto-controller Switch Company, Simplex Works, Vienna Road, Hammondsey, S.E. Fluxite makes soldering a simple matter, even for the novice. The success of the preparation is clearly demonstrated by the number of important engineering firms who are users of it.

A Simple Live Axle without Differential Gear.

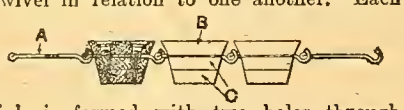
In view of the number of light runabouts which have been made lately the description of a live axle without differential will be of interest. On a through shaft A are mounted two axle tubes B, each of which has attached to it at the outer end one road wheel hub, and at the other end a disc C which near the outer edges frictionally grips a chain sprocket D. Screwing upon each end of the through shaft A is a nut E which



acts upon a spring washer F so as to force the two sleeves B together and cause them to grip the chain sprocket D with any desired pressure. The grip is the same on both sides of the chain sprocket, and it will be understood that for normal running the sprocket drives both road wheels equally. On turning a corner the inner wheel has to slow down, in which case the inner disc C overruns or slips in relation to the driving sprocket wheel D. It will be seen that the adjustment of the pressure by means of the nut E is very simple, and can be effected at either end. Both discs C are formed as brake drums, so that both road wheels are retarded equally.—O. B. Thomas, No. 30,318, 1909.

A Chain Belt.

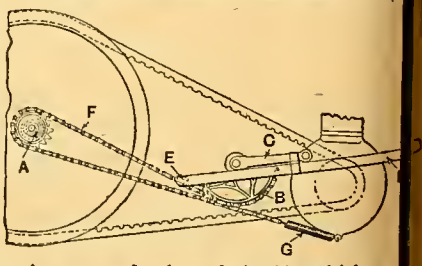
The belt consists of a number of links A, one end of which is formed as a hook and the other with a slot which the hook engages. Thus all the plates can be linked together, and are free to swivel in relation to one another. Each



link is formed with two holes through which pass wood screws joining together an upper piece of leather B and two smaller pieces beneath as at C. The leather pieces are given a V-shape to fit the pulley.—E. C. McLaren and F. Walker, No. 1,372, 1910.

An Effective Hand Starter.

This starting device has the advantage that it provides a low gear ratio to overcome the initial inertia of the engine after which a higher gear comes into play to provide the requisite speed of rotation. The drawing illustrates a construction in which the device is applied to an existing machine, the usual free-wheel clutch A and pedalling chain wheel B being retained. To the crank C is secured a hand lever D which has a projecting heel E. Attached to the chain wheel



is one end of a chain F, which passes over the free-wheel A, and is secured at its other end to a spring G fastened to the engine crank case. When the hand lever D is pulled upwards the chain wheel B first rotates the free-wheel A, thus turning the engine. After the initial inertia is overcome, the chain E presses on the chain F, increasing the speed of rotation owing to the greater radius of its leverage as compared with that of the chain wheel B.—H. Turner, No. 9,707, 1910.

THE MOTOR CYCLE

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ADDRESS—20, TUDOR STREET, LONDON, E.C.

Riders' Weights in the T.T. Races.

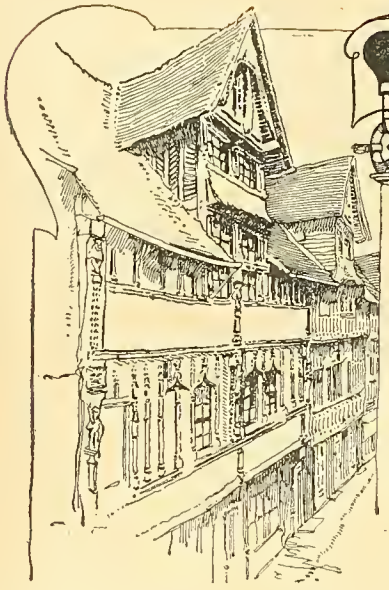
WHEN we first commented on the regulations for the Senior Tourist Trophy Race which is to be held in the Isle of Man at midsummer we had very little to criticise—in fact, we were under the impression at the time that every tem had been well considered. Quite recently we drew ttention to an apparent oversight in the Junior T.T. vent, in that no weight limit was to be imposed on he so-called "lightweights." This is not as it should e, and will, we fancy, receive attention from the A.C.U.

Regarding both races, it has since occurred to s that the organisers may have overlooked an mportant question which has been brought to our otice within the last week or two, and one which, in ur opinion, requires ventilation. We refer to the iders' weights. While the course was confined to omparatively level ground weight *per se* made little ifference to the results, except in connection with ne or two competitors who probably lost ground in imbing Glen Helen owing to their heaviness. his year, however, the course includes four to five cents of a steep mountain road about six miles in ngth, and for this reason machines that are ridden ultra-light riders will score an immense advantage. e are aware of the great difficulty of adjusting lers' weights by artificial means, and practically no otor cyclists would compete under those conditions, the addition of weight by means of lead or bags sand would be a source of danger. However, we ntend that there ought to be a weight limit, and rider should be allowed to compete whose weight very much below that of the normal standard of e average motor cyclist. It would be obviously surd to fix the limit too high, as the percentage of riders likely to compete who weigh over eleven stones is small, and we know they are too good sportsmen to wish to handicap the bulk of the remaining competitors; nevertheless, we should like to see the whole field of T.T. riders competing under fairly equal conditions, and, without fixing an arbitrary weight limit ourselves, would prefer to hear suggestions from others. For the moment our proposal is that any rider weighing under 140 to 150 lbs. in riding apparel should be barred on the ground that after the event it is open to the rider of average weight to urge the plea that he would have won if he had not been handicapped by meeting competitors of considerably less than average weight.

The Advantages of Light Weight.

IT might be argued that the advantage an ultra-light rider gains by reducing the load on the engine is cancelled by his instability at very high speed on rough ground, but this argument loses its weight when the hilly nature of this year's course is considered. Assuming an equal degree of skill, engine power, etc., imagine what a gain it would be to be able to use a high gear ratio on the level and yet climb the thirty odd miles of mountain roads at even one mile an hour faster than other competitors.

We believe we are correct in saying that only one race has hitherto been held over the course in which the weight or load carried has not been confined within specified limits. In the car Tourist Trophy Races the load had to be equal to four average weight passengers, although only the driver and mechanic sat in the car. What would have been said if one car had carried a weight equal to three passengers and another four? We venture to think a good deal!



A Scamper in Brittany.

By F. HORSFIELD.

THURSDAY to Tuesday is a short time for a trip to Brittany, but our special object was to find a suitable camping site for the summer holidays. We, *i.e.*, Steve and the writer, left Waterloo at 7.30 on the Thursday evening, riding from Hampstead on Triumph and Douglas motor cycles. Reaching the terminus with only a few minutes in hand, ten o'clock saw us on the *Princess Ena* at Southampton, the machines being lifted by a powerful crane and lowered into the hold.

The sea was as calm as a mill pond, and we thoroughly enjoyed supper and breakfast on board. Armed with C.T.C. Customs tickets, we were saved the trouble and inconvenience of paying an *ad valorem* duty on the machines, and the small sum of 6½d. each, for a *permis de circulation*, was the only sum demanded of us on landing at Havre.

A stuck throttle piston on the Douglas caused some delay in setting off for the Côtes du Nord, but an obliging motor boat owner placed his workman and workshop at our disposal and the piston was soon ground down to the correct size and refitted. A steep hill was ahead of us, so we started the machines on the stands to warm them to their work.

It was twelve o'clock when we reached Ploubalay, and here we lunched (Hotel des Voyageurs); forgetting that it was Friday, and Good Friday at that, we were rather surprised to be treated to soup maigre, followed by three courses of fish, and momentarily at a loss to understand the embarrassed look on the waitress's face when the question was put to her, "When are you going to bring us some meat?" However, we finished up with rice, custard, cheese, and coffee, so did not fare so badly.

The writer's Douglas laden with camping kit.

The machines were laden with tent and camping equipment, panniers being slung from the back carriers, and these were, in a measure, responsible for the first and only mishap during the tour; in mounting the writer's foot slipped on the pedal and caused him to fall over on his machine, the footrests struck the ground, slewed round and snapped the back brake pedal.

Our destination was Lannion—100 miles distant—where we were expected by friends, so, the brake repaired, we made tracks, going *viâ* Lamballe and St. Brieuc, making tea by the roadside some few miles before reaching Guingamp, and made Lannion shortly before eight. Our host, an old schoolfellow, met us at his garden gate and conducted us to the house; where, scorning all offers of beds, we erected the tent in the garden.

The following morning was spent in strolling round Lannion, visiting the old school and the interesting church of Brelevenez, which is reached by climbing 250 steps. In the afternoon we rode out to Trébeurden, our host and family in their car, where we found a delightfully sheltered spot for our summer camp, 100 yards from the beach, and adjoining a farm where eggs, butter, milk and poultry were procurable. Regretting that our time was too short to admit of camping on the site, we returned to our friends at Lannion, and, next morning, leisurely packed up and set off for St. Malo, this time varying the route passing through Tréguier and lunching at Pontrieux (Hotel de France). The scenery was finer and the gradients more severe than *viâ* Guingamp, but neither machines required pedal assistance.

A Wise Precaution.

The little twin sulked a bit after leaving St. Brieuc, the result of too liberal dosing with treacly French oil, but it waxed repentant as the hills loomed before us; to avoid delays in the dark however, we cleaned both sparking plugs and carburetter and had no further trouble.

At Lamballe we spied an inviting pastrycook's and sampled most varieties, making tea from our own supply. Six o'clock saw us at Dinan, where so much time was taken up in sight-seeing that it became necessary to light up

A Scamper in Brittany.—

before starting on the forty kilometre run to St. Malo. A gale was blowing from the sea, and the dust rose in clouds in our faces. The Triumph was fitted with an excellent lamp which shone far ahead, and so led most of the way; it was well that this was so, as the rough road jolted off the back basket from the carrier, the contents of which—pots, pans, tea cups, knives, forks, etc.—were strewn all over the road, whilst the rider went merrily on all unconscious of his loss, the head wind drowning every other sound; a new belt which was strapped on the top of the basket rolled away, and was never recovered; in fact, its loss was never noticed until some time after we had both returned to England.

Lamp Troubles.

St. Malo was reached at 10.30 p.m., much delay being caused by a badly working lamp on the Douglas, and so high was the wind that we anticipated considerable trouble in finding a pitch. Running through to Parame, however, and turning down a promising lane, we came across a sheltered spot, where we took *French* leave and made ourselves at home.

The Return Journey.

We were up betimes the next morning, the boat leaving at nine, and reached the quay with five minutes in hand. The writer, being a bad sailor and anticipating a rough crossing, shortly after sought the quietude of his cabin, but Steve tempted Providence by taking all meals on board, and, further, going to the fiery and oily regions below to inspect the engines, machinery of all kinds possessing such an attraction for him that he has frequently been known to stop up until the small hours working at his motor, and, on one memorable occasion, the maid, on coming down to light the fire, found him thus busily engaged. Expressing surprise at his having risen so early—this is no failing of his—she was astounded to hear that he had not been to bed at all.

Three pounds each covered our expenses for the trip, the fare from Waterloo to St. Malo—second rail and first boat—being £1 8s. 6d. only, and, short though the time was, we thoroughly enjoyed the holiday, and look forward to running over the route again.

We were entirely free of tyre troubles, the Douglas being fitted with self-sealing tubes, but Steve suffered two punctures in the short ride from Waterloo to Hampstead, a wire nail causing one and a sabot nail, which must have been in the cover some time, the other. Our outfit comprised a large cottage tent, with fly-sheet, two eider-down quilts, sleeping bags, rubber ground sheet, ground blanket, stove, pots, pans, cutlery, water bucket, ¼ lb. tea in aluminium box, and a good supply of bacon. The poles will be seen strapped to the front forks of the Douglas in the photograph on the previous page, which also shows the panniers and small pilgrim basket.

The hobby of motor cycle camping is going ahead in leaps and bounds, as, in addition to the freedom and independence one enjoys, the saving of hotel bills is no small advantage. The writer has pleasure in repeating his previous offers of assistance to any who may be desirous of taking up camping if they will communicate with him c/o the Editor of this journal, enclosing stamped envelope for reply.

The evening meal.

Market women, Lannion.

Seaside camp near Lannion.

ACTIVITY IN MOTOR CYCLE CIRCLES.

Since the beginning of the month all has been stle in the motor cycle competition world, and the ll is to be kept rolling. Last Saturday the Bristol and M.C. carried out its open hill-climb, next turday the Herts County A.C. has arranged a nilar event, whilst for the 13th inst. the new South-east London M.C.C. has announced an open event. On the same day the first Amateur v. Trade Trial is on the *tapis*. May 20th will see a further trial of this nature, and that energetic body, the Herts County A.C., winds up a busy month with some open speed trials near Hatfield.

Incidents of the Quarterly Trial.

ONLY one single-geared machine accomplished a non-stop run in the Yorkshire Centre Quarterly Trial. What an advertisement for the type! The underlying purpose, however, of these lines is to correct any wrong impression the above fact may have left in the minds of inexperienced motor cyclists.

First of all, it seems to have been overlooked by some that only nine machines with single-gear ratios started, variably-geared machines outnumbering them in the proportion of four to one. At the finish the odds were increased to thirteen to one. What a different tale would have to be told if we had had some of the old Quarterly Trials hands such as W. F. Newsome (Triumph), J. H. Slaughter (L.M.C.), G. E. Stanley (Singer), V. J. Surridge (Rudge), and B. V. Jones (Premier), to quote but a few who have performed conspicuously on single-geared mounts. But the decision of most of the leading manufacturers to abstain from this year's trials has produced results which are hardly a fair reflex of the capabilities of modern single-geared machines.

SCENES ON THE QUARTERLY TRIAL COURSE IN YORKSHIRE.

(1) H. G. Dixon (New Hudson) rounding the last hairpin bend on Saltburn Bank. This is the spot where Morgan came to grief through travelling too fast.

(2) Effecting adjustments to H. F. S. Morgan's runabout after it had charged a wall on Saltburn Bank.

(3) Lythe Bank. W. H. Watkins (two-speed Premier) being overtaken by S. Sawer on a single-geared machine of the same make.

Influence of the Results.

The ordinary man in the street who is contemplating the purchase of a motor cycle—and there were hundreds of interested persons watching the trials riders—does not take all these details into account; he is influenced by results, and odds of thirteen to one are sufficiently convincing for him.

Personally, I am by no means antagonistic to the change-speed gear, but I do consider a single-geared mount the more sporting, and so long as I can climb all hills with one gear I am quite content to leave complication alone. I accompanied the competitors round the course on the 22nd ult. on a T.T. Roadster Triumph, and having climbed Sutton Bank last year on a similar mount with a 4½ to 1 gear, and turning a deaf ear to the Yorkshiremen's stirring tales of precipitous climbs and hairpin bends, I imagined 4⅞ to 1 would enable me to cope with all emergencies. It so happened that I was not far out in my estimate, for although I failed to pick up after rounding the corner on Sutton Bank after flying over the 1 in 3.96 section, I attribute this more to the rough condition of the road and the fact that I could not operate the spark lever with any degree of certainty. Restarting with the spark lever three notches retarded, the engine gathered speed all the way in the usual Triumph style.

Let me repeat here that half the failures on Sutton were due to overheated engines. If the A.C.U. had allowed the riders to do what they did last year, and cool their engines at the hill foot, practically everybody would have succeeded at the first attempt. So far as I could gather no competitor's 3½ h.p. single was geared higher than 5¼ to 1.

As was pointed out in these pages last week, the only objection to allowing the riders to commence the climb in a bunch is the fear of them impeding one another. This happened in one or two instances, but a few competitors whose chagrin has got the better of their scruples have sought to cloak their failures by this excuse. As it happens, two riders who alleged themselves hampered.

SPRING QUARTERLY TRIAL IN YORKSHIRE.
G. T. Gray, C. S. Burney, and B. A. Hill, who, riding 3½ h.p. Rudge-Whitworths, accomplished non-stop runs, although Gray lost marks for pedalling on Sutton Bank.

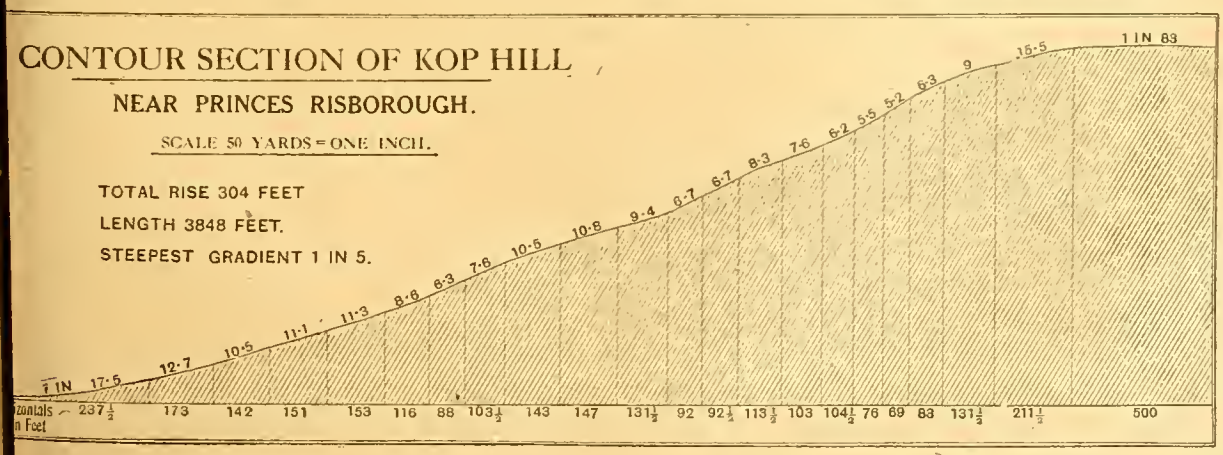
filed under the very eyes of three officials—Messrs. Hall, Bischoff, and Douglas—and I hear that the number of grumbles is increasing.

Besides Sutton, there were a number of other hills which caused trouble, the surface of Rievaulx (pronounced Rivers) Bank was tacky; one competitor had to stop, and one or two others only just scraped up. The severity of the second test hill—Lythe Bank—was over-estimated, in my opinion; at any rate, the Triumph gathered speed all the way up. Sutton is far and away the worst ascent, for frequently a machine is able to account for the steepest section, but fails miserably when asked to pick up on the 1 in 6 gradient after rounding the hairpin bend at a walk.

A Case of Hard Lines.

A. D. Arter was the victim of misfortune or he would have made No. 2 single-geared non-stop rider. On Sutton Bank he noticed that his James engine was almost red hot, and it finally came to a standstill. An inspection revealed the fact that a leak had occurred in the partition dividing the petrol and oil compartments, with the result that he was pumping an oil mixture of petrol and oil into the crank case. Liberal use of the pump to make up for space occupied by the petrol enabled Arter to finish without further trouble. Apart from the competitors' machines, I noticed quite a number of single-geared mounts behaving well. One of *The Motor Cycle* photographers was mounted on a 3½ h.p. Brown, which, although loaded with a heavy camera, made short work of the majority of the hills. Norman Longfield, a travelling marshal, climbed every hill, I believe, on his T.T. Triumph; there was also a Bradford motor cyclist on another Triumph, and others who were riding Bradbury, Singer, and Rex machines. A typical American youth, garbed in oil-bespattered clothes and shoes, mounted on an M.M. machine with Fitall gear and tandem attachment was also among the followers. I was amused at one little incident on the return journey. Handing the woman at the toll gate outside Whitby a copper, I asked if the steep hill which we could see in the distance was Lythe Bank. "Yes, sir," she answered earnestly, "and it is a tidy bank, is yon." G.S.

H. & J. Stevens on 2¼ h.p. two-speed A.J.S. lightweights being overtaken by Percy Butler on a 7 h.p. two-speed Indian during the ascent of Lythe Bank. The two aforementioned lightweight riders gained first-class certificates.



QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Testing a Magneto.

I have a 3½ h.p. N.S.U. with Eisemann low-tension magneto which is very difficult to start. I am not quite sure whether it is the magneto or carburetter that is at fault. Would you please let me know how to test the magneto for correct strength?—A.G.

It will be better to test the magneto in a rough and ready way by placing the sparking plug on the cylinder, pedalling the machine slowly, and getting someone to watch if a spark takes place at comparatively slow speeds. To give the magneto every chance you should place the points of the sparking plug as close together as possible, say .4 mm. If there is a regular spark while the engine is turning round comparatively slowly, you may be sure that the magneto is all right. Should a spark not occur or prove to be visible you will be wise to send the magneto to be overhauled by the makers.

Flushing Crank Case.

In "Hints and Tips," paragraph 228, there is advice to "close openings to crank case" when flushing out with paraffin. Where are these openings? Should paraffin be put in through compression tap at top of engine? My engine is a 2½ h.p. Jap on New Hudson. After a ride the engine is drenched with oil on outside towards back wheel, and sometimes the base of magneto is swimming with oil. Does this mean over lubrication?—F.W.C.

To flush out the crank case it is best not to inject paraffin through the compression tap, but to disconnect the union from the oil pump to the crank case and pour a small teacupful of paraffin in through this orifice; then block up the orifice with a plug of wood and pedal the engine for a minute or two; afterwards take out the plug, open the drain tap or drain plug at the bottom, and let paraffin drain out. When you have finished, replace the plug and the oil pipe unio and inject three charges of oil into th crank case before starting. It looks ve much as if you have been giving too muc oil. You might slightly reduce this.

Misfiring.

My 3½ h.p. machine goes a right except that it misses fi on the level or down hill. climbs splendidly and the com pression is very good. The ca buretter (Longuemare) would seem be at fault, as the machine goes eith too fast or not at all. Can you e plain this?—R.J.

We think that if you fit a larger choke tube the engine will run satisfactori without misfiring. Insufficient air seem to be the trouble.

A Clicking Noise.

I find a clicking noise comin from the exhaust valve of m machine, and on looking throug your book "Motor Cycles an How to Manage Them," pag 101, you explain a method of how locate it in the timing gear. I fin that the valve does drop suddenly aft having apparently travelled rig down, which means worn gears cams. Would you advise me to ha new timing gear, or wait until really proves itself to be worn and w not close the valve correctly?—E.G.

We should advise you to leave things they are if the machine is running sati factorily. As soon, however, as t power falls off it will be as well examine the timing gear and see if a appreciable wear has taken place.

Petrol Leakage.

I have been greatly troubl with petrol leaking from ca buretter past needle valve. have tried a new needle, b without avail. In fitting a ne needle should it be ground in wi emery powder, and if so what is t proper way to do it? The machi runs very well on the road, but if l standing, the petrol drops very fast fr carburetter.—G.A.H.

You might try grinding in the valve wi crocus powder, which is much finer th emery. It should be done very mu the same as an ordinary valve is grou in, only the needle must be turned rou between the finger and thumb. Be qu sure that the needle valve fits proper and prevents petrol passing, also that t float is not punctured.

Harry Long in Hull. He is being checked out of the city by P. Walker, another old and well-known racing cyclist. At one time both were officials of the Yorkshire Road Club and now both ride Triumph motor cycles. Last week, Long completed his 10,000th mile—the first portion of his long-distance ride during 1911

Petrol Blowback.

I have a 4 h.p. tricar, automatic inlet valve, and a 1911 B. and B. When running at full speed the petrol blows back through the carburetter, and the engine eventually stops. The engine takes very little air, and though I have fitted a No. 28 jet the petrol still blows back. Can you advise me what to do?—L. A.

I should be inclined to think that the trouble is due to too weak an inlet spring or to the valve opening too far. The fact that the engine takes very little air seems to indicate that too small a jet is fitted, or to the level being too low.

Flexible Sidecars.

I am about to purchase a sidecar, and I always thought that I should prefer the "flexible" type. I have, however, been warned against this type, because it is dangerous, and liable to skid. Will you please say if, apart from this danger, there are any other objections?—H.P.

The flexible sidecar works quite well. The motor cycle can be balanced, but the balancing is not quite the same as if the sidecar were not attached. The effort to keep upright is slightly more pronounced. There is also the trouble that the machine will not stand upright when left alone, which is rather awkward when any little adjustments have to be made at the roadside. Beyond this and the matter of skidding there are no other objections. We may add that the flexible sidecar undoubtedly requires the least power to propel it.

Inequality of Cylinder Power.

I have a 6 h.p. twin-cylinder motor cycle, magneto ignition, and when running machine on stand I find the front cylinder runs almost twice as fast as the back, when run singly. How do you account for this?—F.J.D.

It is by no means an uncommon thing to find that one cylinder in a twin gives more power than the other. This difference in power may be due to the difference in the tension of the valve springs, possibly unequal wear in the magneto contact breaker, unequal lubrication, increased carbonisation in one cylinder causing the piston rings in that cylinder to be, perhaps, stuck up and the others to be perfectly free. Of course, it is always the aim of the man who tunes up his own machine to synchronise both the cylinders as far as possible.

Red-hot Exhaust Pipe.

I have a low powered machine, the exhaust pipe of which becomes red-hot after a few minutes' running. The pipe has a right-angle turn on leaving the cylinder, so I propose fitting an exhaust chamber about four inches square, through which the gas will pass into the pipe and thence into the silencer. Do you think this is likely to have a good effect?—H.L.

Of course the fact that there is a sharp bend in the exhaust pipe would in itself almost account for the latter becoming red-hot. A red-hot exhaust pipe may well be due to imperfect combustion, and re-adjustment of the carburetter might cure the trouble. Also see that the exhaust valve spring is of the correct tension, and the valve being raised the original amount. The addition of an expansion chamber, as suggested in your letter, would be an undoubted advantage.

READERS' REPLIES.

Gears for Sidecar Work.

In the issue of your valuable journal for April 20th, I notice an enquiry from "P.A.S." in regard to an engine-shaft two-speed gear. As my case is the same as your correspondent's in almost every detail, my experience may assist him. In my opinion, a great drawback to an engine-shaft gear, which you have not mentioned, is its exposed position in the event of a skid or a fall, of course when riding solo. A knock or strain upon the end of the gear is greatly magnified on the engine-shaft, and the latter is almost certain to suffer, as the weight of the gear causes considerable leverage. The first ride I had solo with a two-speed of this kind, I was unfortunate enough to have a bad skid on stone setts, and except for the flimsy protection of the footrests, the machine's weight was entirely on the gear. The result was a new engine-shaft, the old one being too badly knocked about for repair. If "P.A.S." does fit a two-speed gear on engine-shaft, I should advise him to carry an ordinary pulley as a spare for emergencies—an advantage confined to engine-shaft gears alone.—H.F.F.

Tight Sparking Plug Thread.

In reply to "R.D.W.'s" query, page 345, April 6th, *re* tight sparking-plug screw-joint, let me suggest that "R.D.W." might try smearing the threads with a paste made of finely powdered blacklead and lubricating oil. I used to find this efficacious in a boat engine for hot unions, such as the exhaust joint.—H.L.

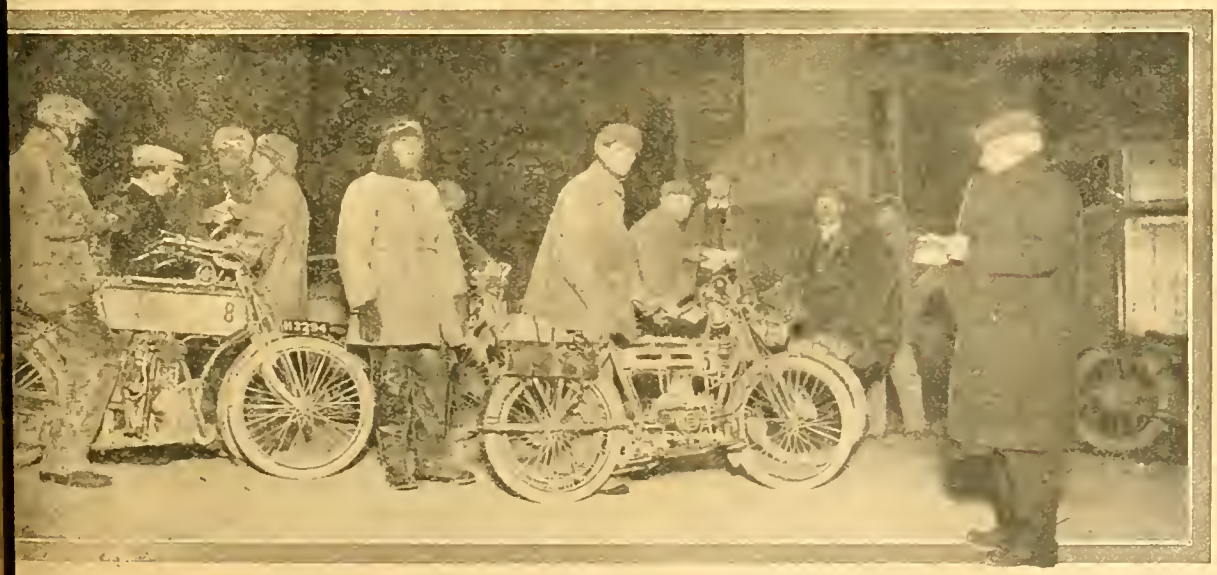
EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"J.E.C." (Leeds). The Mahon variable gear.

"C.C.S." (Bath). What would be the cost of taking a motor cycle to Ceylon? Would it be of much help to a tea planter to have a motor cycle, and can spares of well known makes, such as Triumph, be easily obtained there?

"G.M." (Manchester). Is chain more suitable than belt transmission for Canada? Would it be cheaper to buy a new 3½ h.p. motor cycle out there or pay freight from Liverpool? Names of agents for leading English makes? Hints as to climate, riding conditions,



M.C.C. JARROTT CUP COMPETITION, EXTENDING OVER 555 MILES.

t of the return journey from Penzance, during the small hours of Easter Monday. W. W. Douglas and P. Phillips (two-speed Douglas) are about to start, od behind them are W. Pratt (P. & M.) and H. B. Karslake (Dreadnought). The complete results of this arduous competition were given in our last issue.

OCCASIONAL COMMENTS.

By "IXION."

Sutton Bank and the Quarterlies.

Lest the list of failures on Sutton Bank on April 22nd should receive exaggerated attention, let me emphasise the peculiar conditions of the climb. The A.C.U. proposes to award a silver cup to the rider registering the highest total marks in the four trials. The Union is well aware that when the four trials are over several riders might easily tie in marks for reliability, etc., and consequently it is compelled to use hill-climbing marks as a basis of differentiation.

The somewhat peculiar method adopted is to fix 20 m.p.h. as the ideal speed on all timed hills in the Quarterlies, and to award marks for climbing in proportion to the accuracy with which this speed is maintained. The riders in the Yorkshire Trial had to cover the entire distance non-stop, *i.e.*, it was impossible to stop and adjust gears for Sutton Bank; this meant they had to ride on a fairly high gear, say 5 to 1, and simultaneously they had to climb a frightfully steep hill like Sutton as near to 20 m.p.h. as they could. It would have been easy to climb it at 30 m.p.h. or more; it would have been easy to keep down to 20 m.p.h. on a specially low gear, obtained by temporarily altering their adjustable pulleys. But to climb the hill at only 20 m.p.h. on a 5 to 1 gear was a really difficult task.

Long Distance Records.

Now that the roads are good and dry and the hours of daylight lengthening, news comes to hand of several interesting projected records. I am now referring to records combining the elements of high speed and long distance, such as were freely mooted after Mr. Catt's six days' ride last autumn. The fact that the A.C.U. has taken a strong line about such attempts has by no means damped some of our more ardent spirits, and its rulings are quite likely to be freely defied in the immediate future—our readers may expect interesting announcements within a week or two.

One well-known rider intends to make a fierce assault on the existing End-to-end figures, and at the conclusion of his ride he plans to take a long, long sleep, and then to go for a six days' record distance, in which the End-to-end ride (about 900 miles in possibly thirty hours) would give him a first-rate start.

In addition, a second rider, not wholly unknown to fame, has his arrangements tolerably forward for another six days' record, totting up to a truly fabulous total, while others, who at present remain undecided, are talking largely about similar achievements with lightweight and medium weight solo machines and with sidecars.

Some of the projects embody inconceivably huge mileages, but really recent performances have so deepened my respect for the modern motor bicycle that I hesitate to say any feat is impossible.

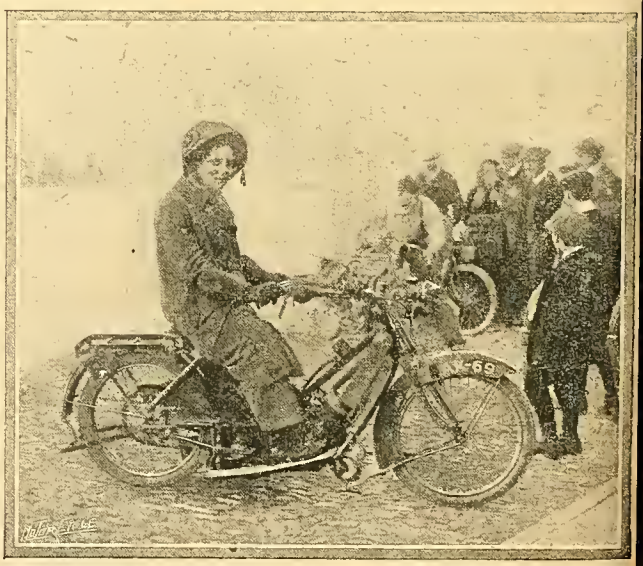
Personally, I rather deprecate such efforts, for they certainly connote distinct risks to the intrepid riders concerned, as well as to the general public. But they will continue so long as the authorities do not take action, and riders can be found who think it worth their while to sit in the saddle for a week to satisfy their ambitions or sporting instincts or both.

I should like to emphasise one point about these high speed and long-distance records, which is that they are all rides of the "go-as-you-please" order, and as such are distinct from the strictly scheduled trials of an official nature. Their pace and their length undoubtedly imply the severest tests of stamina, both as regards man and motor, but there is still credit in the scheduled trial, where a single inopportune stoppage may spell failure to attain the highest awards.

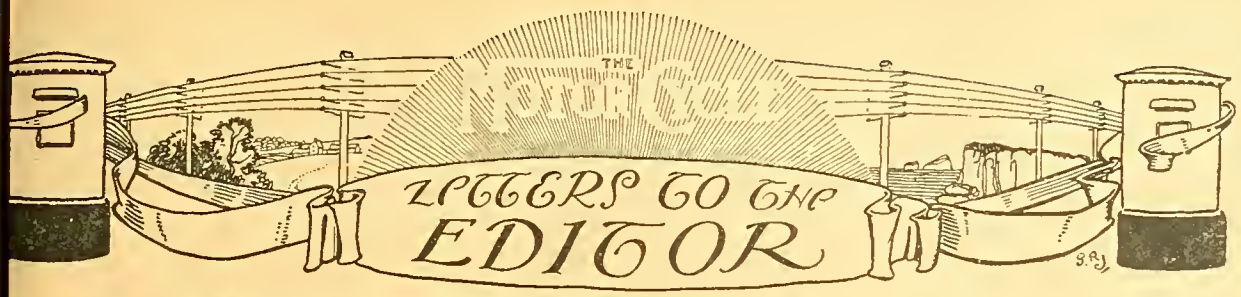
As a practical example of what I mean, Mr. Catt's ride was obviously infinitely superior to any A.C.U. Six Days' Trial achievement in point of difficulty, length, and speed; at the same time, had Mr. Catt been riding under A.C.U. regulations, his ride would have failed, for the long stoppage on the sixth day would have cost him so many marks that a minor award alone could have been secured. So the competitors in standard trials need not feel depressed if from one point of view their doings are overshadowed by the freelance trials; from another point of view, that of strict reliability, the scheduled trial is often a sterner test.

A Necessary Addition to Toolkits.

It is rather late in the day to press the urgency of supplying every toolkit with an instrument for removing exhaust valve springs and cotters. Yet only last week I saw a comparatively expert rider consume quite a quantity of time in the effort to remove the exhaust valve of a very famous 1911 machine. His standard kit contained no special tool for the purpose, and though his private kit contained three or four such tools, not one of them fitted the engine in question. Its cylinder was devoid of those convenient radiating flanges which serve as fulcra for an improvised tool on other engines—until they break—and in the end the reluctant valve was barely extracted by two pairs of hands. That such a state of things should be possible in 1911 is sheer scandal.



The latest addition to the ranks of lady motor cyclists is Miss Pickles, Morecambe Bay, who is portrayed above on her 1911 two-stroke Scott.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Best English and American Times.

5575.]—Replying to letter No. 5555 from Messrs. Air ings in *The Motor Cycle* of the 20th ult., I think the ent accident to a well-known racing motor cyclist is icient reason for me to decline their offer with thanks. our contributor "Elsie" unfortunately wrote a little too n, or she would not have quoted the gentleman in stion. For her information I would also add that even ks offer wind resistance. But there, perhaps she has er heard of "stream line effect." At any rate, if she lies the shape of the Indian tank she will perhaps be able to learn. O. C. GODFREY.

Hill-climbing.

5576.]—I see Mr. A. Glover refers to "Calverly ting" in your issue of 20th April. I saw the previous rence to this hill, and went to try it a week or so ago company with Messrs. Dougill and Walker, of Leeds. ide a 1911 3½ h.p. two-speed Premier, and my friends 9 Bradburys. We all climbed the hill successfully, the dburys with about 5 to 1 gear. My machine would start on the stiffest part of the hill, which I estimate 1 in 4½. I also carried Mr. Dougill, who weighs eleven nes, up on my carrier.

J. C. BENNETT MITCHELL.

External Band Brakes.

5577.]—In your issue of the 27th ult. "Ixion" says that sane designers of four-wheeled motor vehicles have long e wisely discarded the external band brake. Surely ion" cannot have forgotten the existence of the Daimler s to which external band brakes are fitted. No, the rnal band brake is a very good thing indeed, and it only mes a "loathsome abomination" when it is badly fitted designed.

s regards clutch control, I would suggest that the long r and the pedal are both bad, and that for the or bicycle the most convenient method of operating the ch is by means of a Bowden lever on the handle-bar.

M.S.

Interchangeability of Tyres.

5578.]—My motor cycle was originally fitted with mer car tyres 650 × 65, but as the Palmer Company no ger make this size car tyre I have to fit another make. ore ordering I thought it advisable to ascertain the meter at the bead of various makes to see if they would ay rims. As the information may be useful to others, I d it on to you for publication:

Make of Tyre.	Diameter at Bead.
Avon	20.9 inches
Michelin	20.9 ,,
Peter Union	20.5 ,,
Dunlop	20.25 ,,
Clincher	20 ,,

was assured by several dealers that all 650 × 65 tyres d the same rim, but as you will see from these figures, bead of a Clincher cover would be required to be tched 2.82 inches to fit the Avon or Michelin rim. I not know if it would be possible to do this, but if it ld be done I should think the strain on the tyre would se it to break down very quickly. J. HART-SMITH.

The Manufacturers' Union and the Quarterly Trials.

[5579.]—Below I beg to state the names of motor cycle manufacturers who, being members of the Cycle and Motor Cycle Manufacturers' Union, have mutually agreed directly to abstain from the 1911 Quarterly Trials:

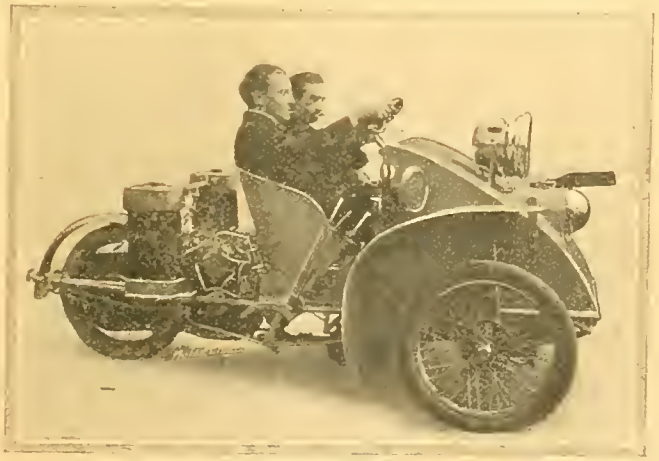
Air Springs, Ltd., Alldays and Onions, Ltd., Bat Motor Manufacturing Co., Bayliss, Thomas and Co., B.S.A. Co., Ltd., Brown Bros., Ltd., Chater Lea, Ltd., Collier and Sons, Ltd., Components, Ltd., Douglas Bros., Ltd., East London Rubber Co., F.N. Motor Agency, Hendee Manufacturing Co., Hobart Bird and Co., Humber, Ltd., Lloyd Motor and Engineering Co., Motosacoche, Ltd., Phelon and Moore, Ltd., Premier Motor Co., Rex Motor Manufacturing Co., Rover Co., Ltd., Singer and Co., Ltd., Triumph Cycle Co., Ltd., V. S. Cycle and Motor Co., A. W. Wall, Ltd., Wilkinson T.A.C. Co., Ltd., and Zenith Motors, Ltd.

I shall be much obliged if you will publish this list in order that your readers may appreciate the awards of this year's Quarterly Trials at their proper worth.

ALF. BEDNELL,
Secretary The Cycle and Motor Cycle Manufacturers' and Traders' Union, Ltd.

From Tricar to Sociable.

[5580.]—I enclose a photograph showing the alterations which I have made to my 9 h.p. Singer tricar, which may be of interest to some of your readers who possess three-wheelers and desire more sociability and speed. I have made the alterations myself, the necessary material costing from two



The sociable illustrated was originally a 9 h.p. Singer tricar.

to three pounds. It is much lighter than in its original form, with which doubtless most of your readers are familiar.

LESTER G. SCOTT.

An Act of Injustice.

[5581.]—I am asking you, in the interests of fair play and justice, to publish the following.

On Good Friday last, about 11.20 a.m., I was motor cycling on the main road from Okehampton to Launceston. A few miles out of Okehampton I was suddenly overtaken

and passed by another motor cyclist travelling at a very high speed, his overalls wildly flapping, and exhaust firing like a Maxim gun. A horse ridden by a farmer in the vicinity, I had noticed approaching me well on its own side of the road.

Suddenly startled, as well it might be, it dashed across the road, escaping the offending cyclist, but dashed into the side of my machine, threw me over into the hedge, and was itself so seriously injured that it had to be shot.

The owner, in the presence of witnesses, admitted my machine was not the one that startled it, but nevertheless now threatens an action for damages and value of the animal.

I have two reasons for writing this—firstly, will the individual who really did the damage come forward (he stopped, but when he saw the results jumped on his machine and rode off as hard as he could)? Secondly, will one, or both, of the two motor cyclists who, I strongly suspect, were with him, and who came up directly afterwards, come forward and help me to fight the action?

They heard the man say it was not my machine that startled the horse. I asked them at the time for their addresses, but they seemed disinclined to give them, and I, in the confusion of mind caused by the collision and the pain, omitted to take their numbers. My friend who was with me heard and saw all, and actually took a mental note of one number, but he also forgot. The letter was T. Surely it is little to ask of them. If I was to blame I would pay and say nothing, but I hate the injustice. Thanking you in anticipation, JAS. EDGCOMBE.

How to Prevent Oil Freezing.

[5582.]—I notice a letter in your paper of March 30th, from a correspondent in Russia, asking for information about how to keep oil from freezing in low temperatures in Canada.

I have ridden, as have several others here, every day this last winter, and had only one oil tank frozen. That was at thirty-five degrees, and was caused by leaving the machine standing still about an hour outside.

On exceptionally cold days the engine was run slowly, on the stand, while I was indoors at lunch. Other times it was left still, with oil tank partly filled (so as to cause no bursting if it froze), and was warmed by pouring hot water over engine and tank, when it was easily started.

The machine I rode was a 5 h.p. Indian with free-engine clutch. Part of the winter a steel sledge runner was used in place of front wheel, but its edges dulled so quickly it was too much trouble to keep sharp so was taken off. After engine was warmed up indoors, the heat from rear cylinder kept the oil warm, and it was heavy oil too.

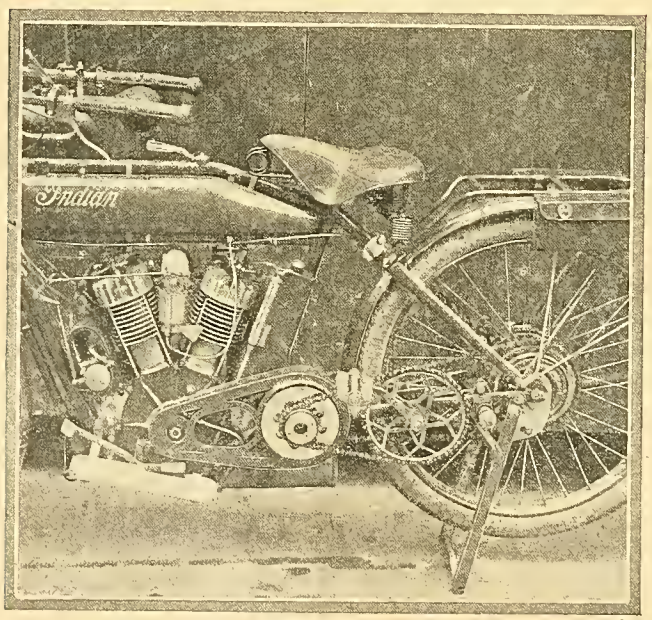
The carburetter gave no trouble, but would take very little extra air.

Regarding temperatures here this winter daily readings of thermometer ranged from 0° to 44° in the day time and below that at night—35° was a common occurrence.

However, your correspondent might be interested to know that on account of a very dry climate on these plains one does not mind 30°F. as much as one would 5° in Eastern Canada.

Have had nose and ears frozen frequently, but moisture is so scarce here that it is not painful, and it is a fact that someone else often tells you that your cheek or nose is frozen before you are aware of it yourself.

Winnipeg. LAWSON BURGESS.



A pedal-starting device mounted on the horizontal back stay of a twin-cylinder two-speed Indian. It has been made and fitted by A. Alexander, of Edinburgh.

Liability of Sidecar Drivers.

[5583.]—I noticed in last week's issue that "N.F.B." [letter No. 5560] is under the impression that by giving a ride to a friend in his sidecar he becomes liable, in the event of personal injuries being sustained owing to an accident with the cycle, but he is undoubtedly under a misapprehension regarding this. A person is only liable to pay compensation for injury to a passenger when such passenger has paid him a fare for being conveyed. The insurance policy he refers to is the special insurance scheme of the Auto Cycle Union, and for 15s. per annum certain benefits, including £250 in case of death, are covered, and where these benefits are taken out in connection with a sidecar the name of the person to be covered has to be endorsed on the policy, and this is only done in cases where a gentleman wishes to insure his wife or *fiancée* or friend who regularly rides in the sidecar.

A. H. PRIESTLEY.

Which Wheel Lifts?

[5584.]—If in your editorial comment to my letter in the issue of 20th ult., you had said that users of skeleton sidecars can prove by experience that the sidecar wheel *"does* lift," but "*can* be lifted," I should be inclined to agree with you, but this was not what I understood to be your query. I still hold to my opinion and agree with your correspondent Mr. Mitchell, who states the facts very clearly. In practice the sidecar wheel when turning a corner away from the car does not lift, nor in theory if the combination is being steered as a sidecar can it do so.

I often drive my machine as a skeleton sidecar, and under the following conditions the sidecar wheel can by a feat of considerable strength be forced to leave the ground if, first, the sidecar frame is very light; second, if the sidecar wheel is not too far from the bicycle, that is, if the frame is narrow; and third, and most important, if the bicycle while going round the corner is steering with the body of the rider as a bicycle and not as a sidecar combination at all. This requires considerable practice, and is very far from a safe thing to do, as the machine is apt to come over on the top of you. It also requires considerable strength, according to the conditions of Nos. 1 and 2. The faster the corner is taken the greater the strength required, of course.

In the same way the front wheel of an ordinary pushbicycle does not come off the ground when being ridden on the flat, but a trick rider can force it to do so, and ride a considerable distance on the back wheel only.

E. S. NEW.

Lightweights in the A.C.U. Trials.

[5585.]—The most excellent account of the trials in your issue of last week "gives one furiously to think."

In the Quarterly Trials, the New Hudson single-cylinder motor bicycles (292.5 c.c.) are classed as lightweights, and awarded first-class certificates. The only Douglas twin (340 c.c.) is deprived of a first-class certificate because it did not succeed in equalling the time standard (on the two hills) prescribed for the heavyweights.

In the forthcoming lightweight Tourist Trophy Race the cylinder capacities fixed by the Auto Cycle Union are 350 c.c. for singles and 340 c.c. for twins. As regards weight, all those who saw the machines weighed at Kop Hill know that the New Hudsons were heavier than the Douglas machines.

In the same issue of your paper the same Douglas machine and rider were awarded the Trotman cup for the best light

weight in the London-Land's End-London competition. Most of your readers, especially those who depend for their motor cycling information on your excellent paper, would be obl ed if you could answer this question: If the Douglas motor bicycle is eligible for the lightweight Tourist Trophy Race, organised by the Auto Cycle Union, why is it ineligible to rank as a lightweight in the Quarterly Trials, held by the same body?

CHARLES S. PATTERSON, M.B., M.R.C.S.

A.C.U. Quarterly Trial in Yorkshire.

[5586.]—I wish to protest strongly against the absurd conditions imposed in the last Quarterly Trial.

Although I made a non-stop run on my 2¾ h.p. Douglas, I am not awarded even a first-class certificate, because I did not climb Sutton Bank at the minimum rate of twenty miles per hour.

The Auto Cycle Union has decided that 300 c.c. shall be the capacity of a lightweight single and 340 c.c. for a lightweight twin.

If the 300 c.c. single were allowed to climb the hill at fifteen miles per hour, why not the 340 c.c. twin?

To expect a machine of 2¾ h.p. to climb Sutton Bank at the same rate as a 6 h.p. or 7 h.p. machine is obviously ridiculous, and, unless the regulations for the next trial are amended, I for one could not think of entering.

W. B. GIBB.

Liability of Sidecar Drivers.

[5587.]—Referring to letter No. 5560 *re* this subject. Your correspondent is quite correct in regard to the risk run by the owner of the cycle if his passenger should meet with an accident; the third party risk has nothing to do with the passenger in sidecar.

As regards your correspondent's query "Who has done it?" I may inform him that I have a large number of clients who drive sidecar machines, and they have taken out policies covering their passengers whilst being driven in the attachment.

ERNEST J. BASS.

Liverpool A.C.C. and Local Police.

[5588.]—I notice in last week's issue you accuse me of having sent a notice to you about the Liverpool police. You are mistaken in this, and also your correspondent, Mr. Hillpot. The notice was sent by the assistant secretary, Mr. L. V. Barton, who intended the letter as a warning to motor cyclists. The persons fined were prosecuted for quite legal offences, and I agree with your correspondent in that respect. I am also of the opinion that the police in this district are considerate to motorists, but several motor cyclists have been warned against speeding on the outskirts of the city, and I strongly advise riders against fast travelling within the city boundary. By so doing they will assist the police and local riders in upholding the reputation of the Liverpool district.

A. J. JENKINS.
Hon. Sec. and Treas. Liverpool A.C.C.

Dutch Club's Visit to the Isle of Man.

[5589.]—We are pleased to note that the members of the Dove club are still in communication with motor cyclists through your journal on this side of the water. As before stated in our letter in *The Motor Cycle* of December 22nd, 1910, we still think that a reliability trial between a representative team of English riders and members of the Dutch Motor Cycle Club would be the means of introducing these two bodies.

We would again like to suggest that a trial could be arranged during the Coronation holidays, viz., June 22nd, 23rd, and 24th, and we should like to hear the views of Mr. Stroen regarding the suggestion.

We also beg to point out that the idea is not to organise a speed test, but purely one for reliability of machines, with which no doubt could be incorporated a tour in many of the interesting towns of Holland.

We are most anxious to fix up a good sporting trial with the Dutch boys, and hope this will receive favourable consideration from all the members of the Dutch Motor Cycle Club.

W. COOPER.
W. PRATT.

The Recent Attempts to climb Stoupe Brow.

[5590.]—With reference to Mr. H. W. Fortune's letter in your last issue, in which he says the Triumph refused to hold the road, may 1, as one of the observers, add a few details. Mr. Atkinson was certainly thrown off the machine four or five times, but immediately after, Mr. W. E. Grange borrowed the same machine, and at the first attempt made a splendid ascent over the same portion, and continued right to the top of the S bend, amidst the enthusiastic applause of the spectators.

Mr. Grange, on his own Bradbury with N.S.U. two-speed gear, had previously negotiated this bad portion, as several others have done, without being thrown off the machine.

Stoupe Brow is an extraordinary hill, and it certainly has a bad surface in places, and that is why I think the A.C.U. Committee have chosen a fine test hill, for without doubt there will be many machines fail hopelessly on it. A hill like this one will demonstrate the disadvantages of certain spring forks over bad roads; also it will show the disadvantages of those two-speed gears which require the bottom gear to be held in engagement by a pedal (a point on which I notice "Ixion" made a few comments in your last issue).

Also there are two or three easy stretches where two or three-speed machines will score over single-geared machines which will require to be geared so low in order to surmount the stiff gradients.

If members of the Scarborough and Harrogate Clubs dare attempt to ride the hill, surely the trade and expert riders in the A.C.U. Six Days' Trials dare to try it, and show us what machines can climb it.

The portion off the beach which is known as Stoupe Bank has not yet been successfully negotiated, but above this portion there is a splendid straight and level stretch as a starting point for the Brow itself.

J. W. F. TRANMER.

SUMMARY OF CORRESPONDENCE.

A letter addressed to N. S. Hussain, The Palace, Nahan, India, has been returned to us through the Dead Letter Office. If this paragraph should catch the eye of the correspondent, the letter shall be forwarded on our hearing from him.

H. Martin writes that he used Pratt's, not Shell, spirit when making the record at Canning Town referred to in our last two issues.

THE BRISTOL B. AND M.C. OPEN HILL-CLIMB.

FORMULA RESULTS.

The following official results on A.C.U. formula reached us after the report of the above event, published on pages 454-456, had gone to press:

CLASS 1.

1. H. G. Dixon (New Hudson)
2. W. W. Douglas (Douglas)
3. F. Ball (Douglas)

CLASS 1A.

1. W. W. Moore (Humber)
2. A. J. Woodhouse (New Hudson)

H. Berwick (Humber) disqualified for pedalling.

CLASS 2.

*1. J. Slaughter (L.M.C.)
2. P. Brewster (Norton)
3. A. L. Ommaney (Rudge)

*Disqualification under consideration.

CLASS 3.

1. P. Brewster (Norton)
2. A. L. Ommaney (Rudge)
3. J. Gibson (Rudge)

Classes 5 and 7 were on time only. Class 4—No results are yet available.

CLASS 8.

1. W. W. Douglas (Douglas)
2. J. B. Kellar (Triumph)
3. Eli Clark (Douglas)

CLASS 9.

1. E. Kickham (Douglas)
2. G. L. Fletcher (Douglas)
3. F. C. Wasley (Douglas)

CURRENT CHAT

TIME TO LIGHT LAMPS

(GREENWICH)

May	4th	... ...	8.25 p.m.
,,	6th	.. .	8.29 ,,
,,	8th	... ...	8.32 ,,
,,	10th	... .	8.35 ,,

Another Motor Cycle Stolen.

A 1909 standard Triumph motor cycle was stolen on the 29th ult., of which the brief specification is as follows: No. AU 389, engine No. 5,650, frame No. 138,681, of 23/3/09, Clincher tyres leather belt. If seen the Long Eaton police should be informed of its whereabouts.

Motor Cyclist and Airman.

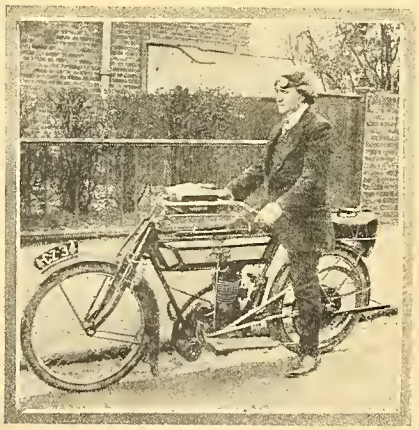
Motor cyclists generally will be interested to learn that George A Barnes, the former motor cycle record holder, will be seen again in motor cycle competition this year. Barnes has been riding a 3½ h.p. two-speed Humber for some weeks past, on which he has made several long runs on southern roads.

Chatting with Barnes the other day a correspondent learnt that he was in excellent health. His riding weight is nearly two stones more than when he last appeared in motor cycle competitions, over three years ago. He was a competitor in the Bristol Club's hill-climb last Saturday.

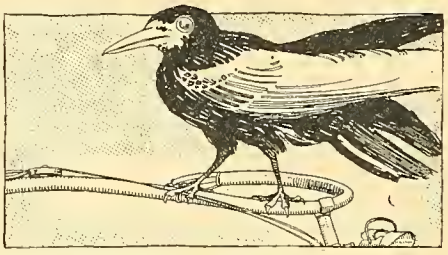
In his serious accident at the last flying meeting—at Folkestone—he sustained a compound fracture of the left arm. Twice previously he had the same arm broken as the result of motor cycle racing spills. The wrist is not quite right yet—being a little stiff at times—but with electrical massage treatment he has almost regained proper use of it.

Barnes is not relinquishing aviation, we learn, having been engaged to appear at the Jubilee fêtes at Douglas in July, where he will pilot a monoplane and probably a passenger-carrying biplane.

Our photograph shows Barnes starting for a run, and is the first taken of him as a motor cyclist for some years.



George A. Barnes, the famous aviator, who has returned to his old love—the motor cycle—and has selected a two-speed Humber.



Three-speeders in Demand.

The demand for the three-speed new Hudson has become so great that the makers are overworked in every corner of their motor cycle department. Roy W. Walker, formerly with the Swift and Premier Cycle Companies, and a well-known rider and owner of Riley, Triumph, and N.L.G. machines, has lately been appointed sales manager of the New Hudson Cycle Co., Ltd.

FUTURE EVENTS.

May 6.—Herts. County A.C. Open Hill Climb at Kop.
,, 13.—South-east London M.C.C. Open Hill Climb.
,, 27.—Herts. County A.C. Open Speed Trials.
June 2-5.—M.C.C. London-Edinburgh Run and and Return Journey for the M.C.C. Challenge Cup.
,, 10.—Birmingham M.C.C. Open Hill Climb Shelsley Walsh.
,, 17.—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
,, 30.—Junior Tourist Trophy Race in the Isle of Man.
July 3.—Senior Tourist Trophy Race in the Isle of Man.
,, 4.—Kilometre Speed Trials on Douglas Promenade, Isle of Man.
,, 8.—A.C.U. Metropolitan Centre Eliminating Trial for Club Championship

Stoupe Brow and the Six Days' Trials.

The A.C.U. Committee has decided that Stoupe Brow will not be included in the third day's route of the Six Days' Trials. An alternative route has been arranged, and competitors will travel northward from Scarborough along the main road over the moors to Whitby, taking the left-hand fork after Cloughton. Leaving Whitby, the men will proceed through Ruswarp up Blue Bank, Sleights, and the Devil's Elbow to Pickering, and thence to Malton. Part of this road was covered in the reverse direction in the Quarterly Trial. It will be remembered that last week we pointed out that Stoupe Brow was considered to be an unfair test, and suggested its omission from the Trials.

French Touring "Trial."

The Lyons Motor Cycle Club held a touring trial, which was in reality a road race over a course between Lyons, Pont D'Ain, Serrières, Bourg, and Lyons, distance 105½ miles, on April 23rd. Greater interest will be taken in competitions organised by the Lyons Motor

SPECIAL FEATURES

Bristol Club's Open Hill Climb: Formula and Time Placings.
A Scamper in Brittany.
Road and Track Records.
Incidents of the Quarterly Trials.

Cycle Club this year, as they intend participate in an inter-club competiti with the North-West London M.C There was a good entry, and the major of Continental makes were represent among them being Motosacoche, Peuge Magnat-Debon, N.S.U., M.R., Excels Terrot, Alcyon, etc. The winner on 4 h.p. M.R. covered the course in 2h. 2 The second rider rode a 2 h.p. Peuge his time being 2h. 23m. 30s.; and third a 2¾ h.p. Motosacoche, time 46m. 45s. Change-speed gears were fit to the M.R., Terrot, and N.S.U. machin and behaved extremely well. The t of the winner is considered excell when the hills in the neighbourhood Serrières are taken into considerati The results by classification are:

THIRD OF A LITRE CLASS (333 c.c.).
1. Motosacoche.
2. M.R.
3. Peugeot.

QUARTER OF A LITRE CLASS (250 c.c.
1. Peugeot.
2. Magnat-Debon.
3. Motosacoche.

The Six Days' Record.

Despite seven punctures on the day of his six days' record atte which delayed him an hour and a Albert E. Catt completed his task 458 miles on Monday, and left Edinbu early next morning for London. Quite e on, ill-luck dogged him, for he suff a burst tyre before reaching Newca but after repairs he still kept pluc on. Catt passed through Newcastl 9.45 a.m. on Tuesday.

A. E. Catt at Newcastle-on-Tyne on Monday on which day he covered 458 miles in his atte to set up another six days' record. He has delayed by tyre troubles.

THE MOTOR CYCLE GAINING FAVOUR AMONG LADIES.

Mrs. Hardee (3½ P. & M.) and Miss Knight (1¾ Motosacoche), who took part in the newly-formed Brookdale M.C.C. opening run to Brighton.

dstrom coming to England again.

Oscar Hedstrom, the talented designer the Indian, will come over to England rly in June to look after the Indian ers' interests in the Tourist Trophy ce. Jake De Rosier is expected to ompany him.

New Single-cylinder Hour Record.

O. C. Godfrey's long-standing single-inder hour record on a 3½ h.p. Rex, to prove upon which over a score of empts have been made, was captured W. F. Newsome at his first time of king on a 3½ h.p. Triumph last week. wsome travelled exactly 128 yards ther than Godfrey in the 60 minutes, t still the record is slightly under a e a minute. Newsome's success will, predict, give this record a new lease life. We have already heard of two ther attempts planned for this week.

dients of Kop Hill.

Several readers have enquired the pest gradient on Kop Hill, Princes borough. From the contour section page 441, it will be seen that the pest section is near the summit and rages 1 in 5.2. For a yard or two the dient actually measures 1 in 5. Kop l is, in our opinion, the finest dis-ery in competition hills up to the sent, and the Herts County A.C. has ely obtained permission to use it t Saturday.

t of the Tourist Trophy Races.

We are again reminded that the cost holding the International Auto Cycle rist Trophy Races in the Isle of Man very heavy, and that this year it l be heavier still. The course is ger; there are two races instead of . The entrance fees have been reased, but the A.C.U. estimates that these will not proportionately cover the increased outlay. The value of the races to the motor industry generally is undisputed, therefore the committee of the A.C.U. makes an urgent appeal to all motorists to subscribe something towards the cost of holding the races. The amounts, which should be sent to Mr. F. Straight, secretary A.C.U., Pall Mall, London, S.W., will be acknowledged in these columns. Application for subscription sheets may be addressed to the Editor *The Motor Cycle*, 20, Tudor St., E.C.

A Peculiar Accident.

A motor cyclist residing in the Midlands, who owns an old-fashioned trica), writes saying that on Saturday, the 15th ult., he had occasion to journey from Coventry to Warwick (completing the distance in one and a half hours). In the latter town, while making a circuit round the lamp on the Castle Hill, his machine got broadside on to rather a steep gradient, and, losing its equilibrium, overturned. Both passengers were unhurt, but the one in front in falling knocked over a little girl who, unfortunately, cut her chin on the kerb. For this affair the driver of the tricar was summoned at the instigation of a road surveyor, the charge being that of "driving in a manner dangerous to the public."

Record Entry for Saturday's Hill-climb.

A telegram from Mr. C. C. Cooke, the Herts. County A.C. secretary, announces that there are over 200 entries for that club's open hill-climb next Saturday. The venue is Kop Hill, near Princes Risborough. In view of the large entry, motor cyclists, both competitors and spectators, are urged to drive with the greatest consideration for other road users.

The M.C.C. London-Edinburgh Run.

Prospective competitors in the above event are reminded that time is progressing and Whitsun will soon be here. Riders desirous of joining the club to participate should apply for membership without delay to the hon. sec., Mr. A. Candler, 1, Lime Grove, Shepherd's Bush, W. Every year riders apply for membership too late to allow for their election, and, in consequence, they are disappointed. The entries up to date are nine motor bicycles, four sidecars, and two cars. Last year ninety-nine motor bicycles, fifteen sidecars, and twenty-three cars were entered, and this year more sidecars are expected.

A Clubroom for Glasgow.

Glasgow motor cyclists have laboured under the disability of having no club room or similar premises, but this want has been removed by the enterprise of Mr. Wm. Dickie who has provided, free of all cost, a comfortably appointed lounge in connection with his garage at 250, Great Western Road. This was declared open by Mr. John Gow, president of the Glasgow M.C.C. The speaker stated that Mr. Dickie desired all motor cyclists, whether users of the garage or not, to make full and free use of the accommodation, and they must not feel themselves placed under any obligation thereby. About sixty well-known motor cyclists assembled at the opening, and all were hospitably entertained by the proprietor, who has established a commanding position in the motor cycle trade in Scotland.

Mrs. W. B. Gibb (Douglas) and Mrs. Baxter (Rex), who competed in the hill-climb at Lansdown Road, Old Weston, near Bath. Mrs. Baxter had ridden from Liverpool for this event.

Second 1911 Monthly Meeting of the B.M.C.R.C.

SPLENDID RACING. HIGH SPEEDS.

C. R. Collier (Matchless) and W. F. Newsome (Triumph) annex World's Records.

THE weather was distinctly favourable for the second meeting of the British Motor Cycle Racing Club, though a strong south-westerly wind was blowing. The attendance was fairly good, and the racing provided much that was of interest, as will be seen later. The club deserves the heartiest congratulation on its programme, which not only gives the necessary information to allow the races to be followed easily, but gives in addition a distance table noting the equivalent miles worked out to five places of decimals for the number of laps covered, a speed table, and a list of existing records, two of which, by the way, were broken during the afternoon.

Performances in the Junior Event.

The first event was the Second One Hour Junior T.T. Race, the sole conditions being that the competing machines conformed to the 1911 T.T. regulations, briefly that the single cylinders did not exceed 300 c.c. and the multi-cylinders 340 c.c., and that the machines should be efficiently silenced. There were only four entries, and of these Martin had suffered a broken spring fork the day before and had damaged his hand, so could not compete. At the end of the first lap Wilberforce and Barnes ran almost neck and neck, while Johnson was far behind, his machine appearing to be geared too highly. Barnes led in the second lap, but in the next round Wilberforce, the winner of the 65 m.p.h. handicap on Easter Monday, took the lead, which he kept until the fourth lap, while Johnson lost more and more ground, until in the fifth lap Barnes thoroughly established the position he had gained in the previous round, and Johnson was half a lap behind. In the eighth lap Barnes continued to gain ground, and Johnson was threequarters of a lap behind. Wilberforce, who had put up such a good fight at the outset, then had to stop, as the exhaust rocker pin of his engine fell out. This was replaced, but as there was still no compression he retired. Barnes and Johnson then continued to run consistently, and in the tenth lap the former signalled that he would need more petrol when he next came round. The next lap he stopped and had his tank refilled with petrol in remarkably quick time. At the eighteenth round Barnes lapped Johnson on the finishing line. Result:

Rider and machine.	mm.	c.c.	Miles.	Yds.
F. W. Barnes (Zenith-Gradua)	76×65.5	297	48	746
F. P. Johnson (Matchless-Jap)	76×65.5	297	46	1,317
*V. Wilberforce (N.L.G.-Jap)	76×65.5	297	—	—

*Retired at end of eighth lap.

It is interesting to compare the distance covered by H. V. Colver, winner of the first Junior T.T. Race. Using a 76 × 64 mm. Matchless-Jap, he covered 48 miles 1,568 yards—822 yards more than Barnes.

At full speed during the Senior Hour T.T. Race.

The procession up the hill at the start of the Senior Race.

The Relay Race.

The second event of the afternoon was the four-lap relay race, for pairs of motor cycles, one of each pair fitted with a single-cylinder and the other with a multi-cylinder engine, the combined capacity of the two not exceeding 1,500 c.c. Whichever partner chose started first, each covering alternate laps. Every competitor when starting had to have his machine resting on the line, and was not allowed to cross this except after the fourth lap. A coloured scarf was worn by each pair of competitors, and handed from one to the other at the conclusion of the first three laps. This scarf had to be worn and not carried. The pairs competing were:

	Name, cylinder, and machine.	mm.	c.c.	
1.	F. A. McNab (Trump-Jap) ...	85.5× 85	488	1,464
	H. A. Collier (2 Matchless) ...	85.5× 85	976	
2.	C. G. Bell (Norton)	79 ×100	490	1,230
	A. J. Luce (2 Bat)	85 × 65	740	
	W. F. Guiver (Kerry)	85 × 88	499	1,158
	S. A. Denman (2 Bat-Jap) ...	85 × 58	659	
	V. J. Surridge (Rudge) ...	85 × 88	499	1,079
	F. P. Johnson (2 Matchless) ...	76 × 64	580	

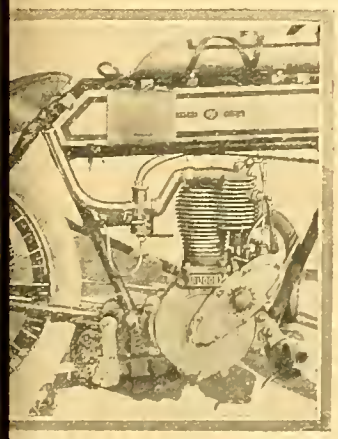
Of the other entrants, Martin did not compete for the reason stated above; Miller, who was paired with Johnson, had the cylinder head of his engine blow off, and Goodacre, who had been paired with Luce, had had a smash the day before. Guiver broke a belt and had to retire, thus eliminating the team; Surridge came in much too fast and overshot the line, while Bell and McNab managed well. In the second round Collier came in at a tremendous pace and stopped neatly. McNab promptly popped the scarf over

cond 1911 Monthly Meeting of the B.M.C.R.C.—

s head, and, putting an end in his mouth, was quickly der way. Bell took the scarf from his partner, but not put it over his head. In the third round McNab pped promptly, and so did Bell, but Luce went off with engine firing on only one cylinder. In the last round llier was first home, romping in at a splendid speed. sult: Collier and McNab, 1st; Bell and Luce, 2nd.

ecords Broken in the Second T.T. Hour Race.

The next event, the second One Hour Senior T.T. Race, was a most interesting one. There were 19 starters. The most remarkable feature of this race was the consistent running of C. R. Collier. He led easily in the first round, and not only kept his place, but improved his position lap by lap. In the third lap he led by about a mile, and in the seventh by about a lap. Surridge made a gallant fight for second place, which he held for twelve laps and then ran out of petrol. Newsome, who had been running with wonderful consistency, then assumed second place, which he maintained. Stanley (Singer), who had been third for r a dozen laps, and was once second, afterwards pped back. Haswell, who had been travelling in good n, retired at the eleventh lap with a broken petrol pipe. nley was obviously in trouble at the seventeenth lap. at the twentieth stopped through valve trouble, while the eighteenth round Harrison Watson stopped for oil. result was as follows:



C. S. Burney's 3½ h.p. Rudge. An interesting fitment will be noticed on this machine. A pipe is conducted from the tra air inlet to the saddle, se that pure r only may be drawn into the engine. The rburetter is the new variable jet B. and B.

Name and machine.	mm.	c.c.	Miles.	Yds.
R. Collier (Matchless) ...	76 × 64	580	63	735
F. Newsome (Triumph)	85 × 88	499	59	1,478
S. Burney (Rudge) ...	85 × 88	499	57	869
E. Stanley (Singer) ...	85 × 88	499	56	1,540
A. McNab (Trimp-Jap)	85.5 × 85	488	55	1,358
J. Surridge (Rudge) ...	85 × 88	499	51	1,119
Gibson (Rudge) ...	85 × 88	499	50	420
Gordon Bell (Norton) ...	79 × 100	490	49	771
A. Hill (Rudge) ...	85 × 88	499	48	1,616
H. Watson (Triumph) ...	85 × 88	499	48	970

he most interesting part of this race is that C. R. Collier the Class D record (maximum capacity 750 c.c.): ious best, J. T. Bashall (two-cylinder Bat-Jap), 85.5 × 666 c.c., 62 miles 1,300 yards, 22nd June, 1910. Collier's ine, it will be noticed, was only 580 c.c.

. F. Newsome, who rode a stripped Tourist Trophy umph free from fakements of any kind, beat O. C. frey's record on a one-cylinder Rex, 84 × 89, 488 c.c., miles 1,350 yards, 24th November, 1909. Both the chless and Triumph Companies earn our heartiest gratulations.

. F. Guiver's 3½ h.p. T.T. Kerry-Abingdon had a nber of interesting fitments, including two plugs with oss-over switch in case of trouble, a Bowden controlled -bar oil pump, and a large funnel to the main air t of the carburetter, with an oil release pipe from the nk case leading into it.

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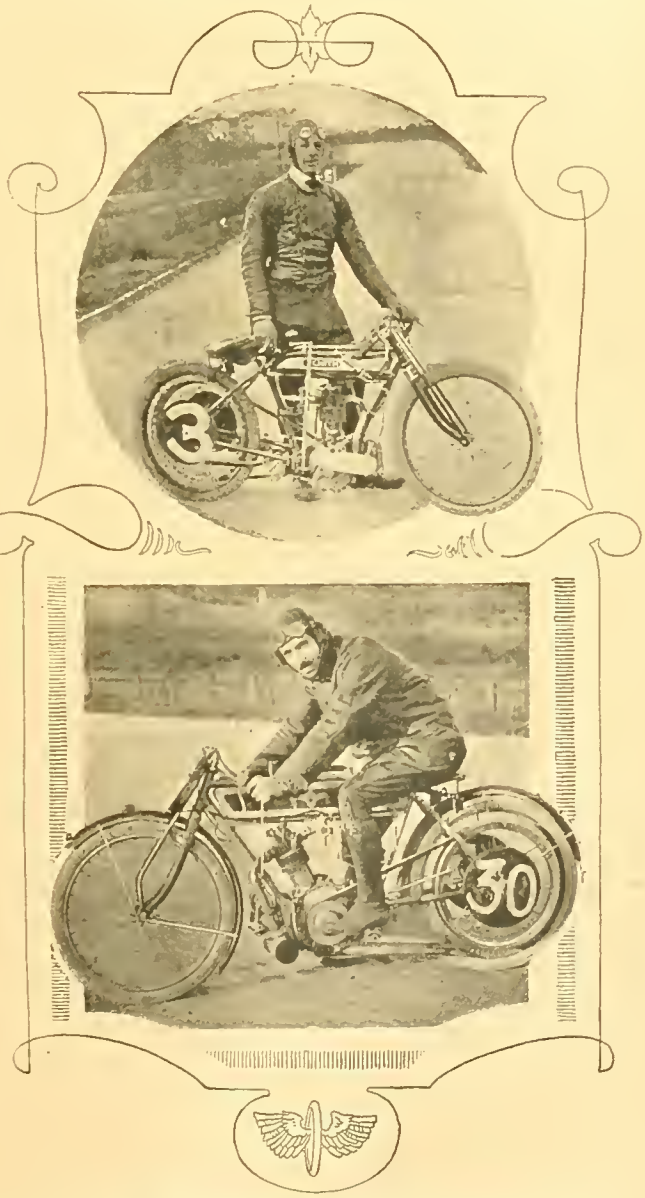
n interesting machine was the 3½ h.p. Matchless, ridden Harry Collier, which was fitted with a short-stroke .P. engine, 90 mm. by 77½ mm. bore and stroke, with bic capacity of 494 c.c. It ran with great regularity ing the Hour Race, but seemed hardly up to 60 m.p.h. in the strong wind. As it was the last entry, it may have been an over-new engine which was not tuned up enough owing to lack of time.

C. S. Burney's 3½ h.p. Rudge, which was the second single-cylinder machine in the Senior Hour Race, was the same one on which he did a non-stop in the Quarterly Trials. It was, of course, stripped and fitted with racing tyres, handle-bars, etc. One of the new variable jet B. and B. carburetters was used with a long up-turned pipe from the extra air inlet. C. S. Burney and Alan Hill were doing lap after lap at practically the same speed on their sister mounts. V. J. Surridge completed laps at 61 m.p.h.

OPEN SPEED TRIALS.

The Nottingham and District M.C.C. has arranged an important event for June 10th. Permission has been obtained to use the Clipstone track—considered to be the fastest in England—for an open speed event, and ten classes have been included in the programme embracing all types of motor bicycles.



(1) F. W. Barnes (Zenith-Gradua), winner of the second Hour Junior T.T. Race. The speed of the Junior Japs has exceeded all expectations.

(2) The ever-victorious C. R. Collier and his 5 h.p. Matchless-Jap. By coverin 63 miles 735 yards in an hour he created a new record.

1,882 MILES IN SIX DAYS.

No doubt it will occasion great surprise among our readers to know that the rider mentioned in our last issue (page 430) who intended to make an attempt on the above record, starting on Monday last, is none other than the holder himself, A. E. Catt.

Mr. Catt ascertained that two motor cyclists, both well-known men (and record holders) were making arrangements to break the record which he put up under adverse weather conditions in November last, so he decided to forestall them and show what he could do when the days were long and the roads good.

Read rs will note that Mr. Catt not only intends to cover four gold medal routes the first four days, but piling more mileage on the top of them each day, viz., Northampton to London, to Edinburgh, Edinburgh to London, London to Exeter, then to Northampton and back; Northampton to Holyhead and back.

	Miles.
MONDAY, MAY 1ST.—Northampton to London and London to Edinburgh	458
TUESDAY, MAY 2ND.—Edinburgh to London (390 miles), and on way back turn off at Newark and go to Lincoln and back, which is about 34 miles ...	424
WEDNESDAY, MAY 3RD.—London, Exeter, London, and on to Northampton	4[illegible]
THURSDAY, MAY 4TH.—Northampton to Holyhead and back	4[illegible]
FRIDAY, MAY 5TH.—Northampton to Dorchester and Southampton, then *viâ* Towcester to Coventry and back to Northampton	4[illegible]
SATURDAY, MAY 6TH.—Northampton to London and back to Northampton *viâ* Weedon. Then to Northampton and Yarmouth and back to Northampton	4[illegible]
Total	2,6[illegible]

We inspected Mr. Catt's standard clutch Triumph on Saturday last, and also sealed the cylinder to the fram as on the occasion of his previous ride, and notice that the equipment comprised Clincher rubber-studd tyres, Stanley-Dermatine belt, Lucas lamp and generat Cowey speedometer. The rider carries no spare cov or belt, and informed us that the machine on which hopes to beat his own previous performance has run 9.5 miles. Signed postcards will be addressed to *The Mot Cycle* notifying the editor of his progress.

SOUTH LONDON M.C.C. OPEN HILL CLIMB.

The above club has arranged a motor cycle hill-climbing competition on Saturday, May 13th, to commence at 2 p.m., on a hill within a few miles of London, of which the entrants will be notified two days before the event. The classes are as follows:

Class I.—Junior T.T. machines. For machines having a cubical capacity not exceeding 300 c.c. for singles and 340 c.c. for twins.

Class II.—Standard Touring Lightweights. For standard touring lightweights only, not exceeding 120 lbs. in weight.

Class III.—T.T. single-cylinder machines not exceeding 600 c.c.

Class IV.—Standard touring single-cylinder machines.

Class V.—Standard touring twin-cylinder machines.

Class VI.—Standard touring singles and twins fitted wi variable gears only.

Class VII.—Any type of single or twin, not exceedi 1,000 c.c.

Class VIII.—Passenger machines (three wheels only Variably geared machines are eligible in any class.

The latest date for receipt of entries is: Ordinary fe noon, Saturday, May 6th; double fees, first post Wednesda May 10th.

Hon. sec., Mr. V. Edwards, 9, Honor Oak Park, S.E.

BRISTOL CLUB'S OPEN HILL-CLIMB NEAR BATH.

P. Brewster (3½ h.p. Norton) making a good ascent in the racing class. He used a new pattern carburetter known as the "C.A.P."

SPEED TRIALS AT PORTMARNOCK.

ON Saturday afternoon last the Dublin and District Motor Cycle Club held the first speed trials of the season on Portmarnock ach, about eight miles from the city. programme included a two miles ices' handicap, an open four miles atch race, and an open 26 miles dicap.

A large entry was secured for each nt, and there was a good attendance the public. The meeting altogether ved that the pastime in the district progressed wonderfully.

. Saul (45 secs.), on a 3½ h.p. J.A.P., the two miles novices' race, J. H. Taylor (40 secs.) being second on his 3½ h.p. Rudge, V. Barton (15 secs.), 3½ h.p. T.T. Triumph, securing third place.

There were eighteen entries for the open four miles scratch race, and it proved a grand event, with plenty of excitement at the turns. C. B. Franklin (4 h.p. Indian) won easily; W. Curtis (3½ h.p. T.T. Triumph) was second, J. Healy (3½ h.p. Rudge) third, and C. E. Murphy (3½ h.p. T.T. Triumph) fourth. The winner's time was 5 mins. 15 secs.

The 26 Miles Handicap.

Thirteen started in the 26 miles handicap, but by half the distance there was a notable thinning from various causes. N. Drury, who was at scratch, conceded 8 mins. 40 secs. to the limit man, his nearest neighbour, Green (on an 8 h.p. J.A.P.) getting away three minutes before him. Drury made a fine effort, but could only finish seventh, J. A. Carville, with 4 mins. 20 secs. start, getting home first on his 3½ h.p. Triumph. W. Curtis (5 mins.), 3½ h.p. Triumph, was second. C. B. Franklin (4 mins. 25 secs.) third. J. Healy (4 mins. 30 secs.) fourth, V. Barton (5 mins.) fifth, and C. E. Murphy (4 mins. 20 secs.) sixth.

Other meetings are being arranged.

Motor Cycle Racing on Portmarnock Beach on Saturday. Start of the four miles scratch race.

SIX HOURS' TRACK RECORD BEATEN.

N Saturday last at Brooklands Lieut. R. N. Stewart, mounted on a 3½ h.p. Trump-Jap, 85½ × 85 mm., made a start at 11.17 a.m. n attempt to break the six hours' d for 500 c.c. engines. The wind blowing strongly from the south- and many heavy rain and hail ls fell, rendering the track at times st like a sheet of water; the her, therefore, was much against rider. Stewart suffered a good deal wet and cold, and was troubled a deal by his rubber belts slipping, hich he used two.

the commencement the rider main- d an average speed of about fifty to wo miles an hour until the rain when he had to stop to shorten his he also stopped in the sixth lap for ncture which caused a delay of five es. Stops for petrol or to tighten belt were also made in the 29th, 46th, 53rd, 68th, 84th, and 86th but the intrepid record aspirant steadily on, riding magnificently.

the 76th lap a stop of eight minutes necessary owing to a broken pipe. The exception of the above-men- incidents the motor and the ne ran without a hitch. At the sion of the sixth hour Mr. Stewart idden 254 miles 37 yards, which is ord for a single cylinder engine not ding 500 c.c. The following are ficial times and speeds:

ur	46 miles	772 yds.	
urs	95	..	1.387 ..
..	132	..	1.559 ..
...	176	..	1.443 ..
...	215	..	95 ..
... ...	254	..	37 ..

*Record for class

Mr. Stewart's intermediate times are interesting. They are as under:

50 miles in	64m.	14.25s.	
100	125m.	13.56s.	
150	204m.	26.53s.	
200	272m.	19.31s.	
250	354m.	2.21s.	

Lieut. Stewart, who broke the six hours' single-cylinder motor bicycle record last Saturday, covering 254 miles in that time. The reflection of his machine in the water shows the state of the track.

Mr. Stewart used a J.A.P. carburetter, Bosch magneto, Lyso and Shamrock rubber belts, and Hutchinson tyres.

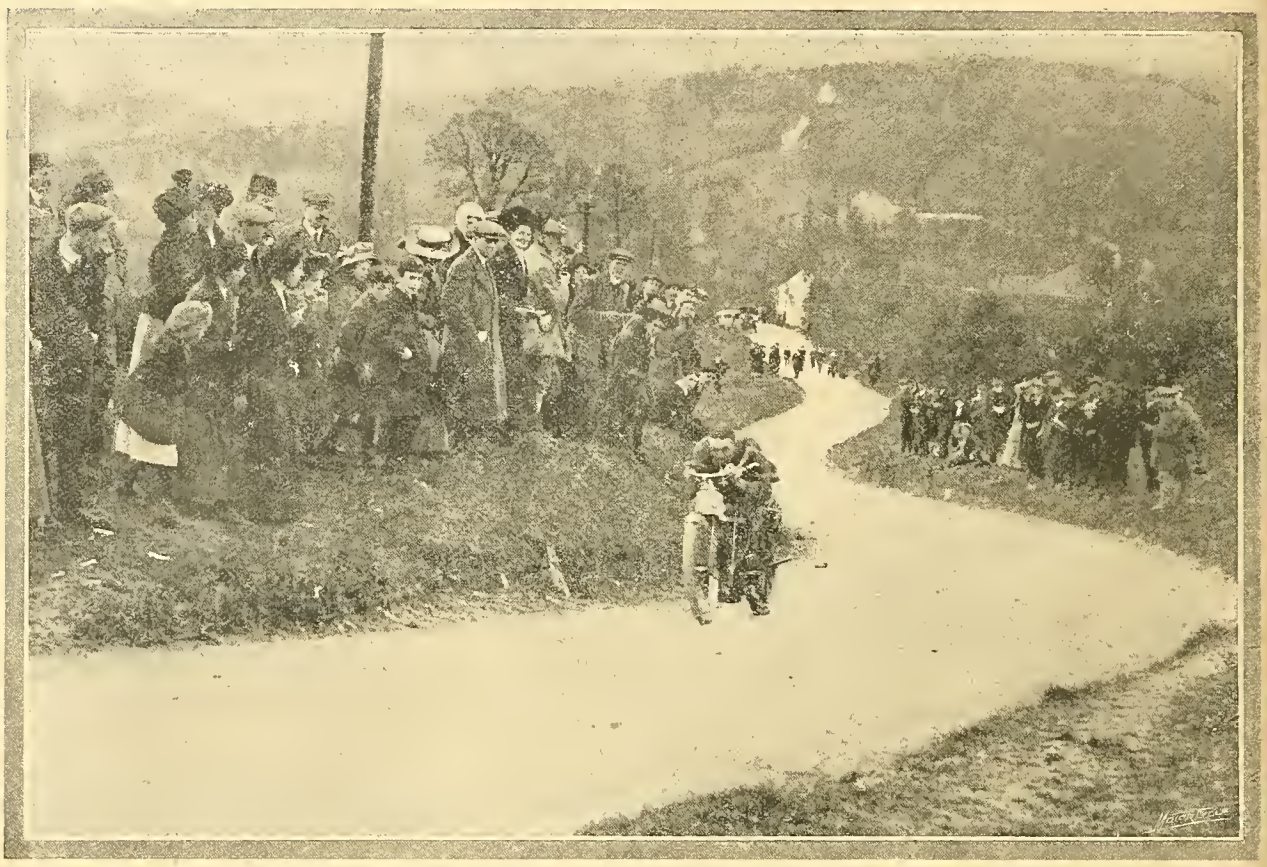
THE FUTURE MOTOR CYCLE.

AS is well-known, the leading motor cycle manufacturers are continually experimenting with new ideas and fitments for the improvements of their machines. In this connection, change-speed gears have received, and will continue to receive, the most serious attention. Though all the standard Triumph motor cycles are single-geared, the change-speed gear has for years engaged the company's careful consideration, and we are informed on excellent authority that the latest product on of the firm exhibits much promise. It would, however, be futile for readers to write for details at this stage. Another firm who have hitherto exploited the single-geared machine, Bradbury and Co., Ltd., to wit, are experimenting with a countershaft gear which so far has behaved in a manner most exemplary.

SECOND GRANT BY THE ROAD BOARD.

We are able to announce the publication of the second list of grants by the Road Board from the Roads Improvement Fund. The list includes improvements in Shropshire, Rutlandshire, Pembrokeshire, Cheshire, Norfolk, West Sussex, the Isle of Ely, Essex, East Suffolk, Oxfordshire, Northamptonshire, Lincolnshire (Kesteven), and Linlithgow. The grants in this list to the county councils and other highway authorities total £68,849.

The Bristol B. and M.C. Open Hill-climb.



This illustration gives a good idea of the S bend, which, as will be seen, was not severe. The selection of the hill was, by general consent, an excellent one.

THE above event took place on Saturday last on a hill known as Lansdown Road, about a quarter of an hour's journey from Bath. The course was a long one, about a mile and a third in extent. The road was narrow, but the surface was good on the whole, though a trifle rough near the top. The curves were easy near the start, but there was a difficult S bend two-thirds of the way up. Where the gradient was at its worst (about 1 in 4½-5) was quite near the finish. Our observation was made on the above-mentioned bend where most of the incidents occurred, from which a fine panorama of the City of Bath could be seen. The wind blew across the course more or less in favour of the competitors, and fortunately there was practically no traffic, which is exceptional on a hill so near a town. There was a large crowd of spectators under the able management of Messrs. W. Cooper and Alec Ross, who on this occasion were clerks of the course. Classes 1 and 1a were smartly run off.

The results on time are as under :

CLASS 1.

1.	H. G. Dixon (New Hudson)	X
2.	F. Ball (Douglas)	9⅗s.
3.	W. W. Douglas (Douglas)	18⅖s.

The above placing awaits decision of judges owing to a protest lodged by F. Ball.

CLASS 1A.

1.	W. W. Moore (Humber)	+ 9⅗s.
*2.	H Berwick (Humber)	+65s.

A. J. Woodhouse (New Hudson) made fastest time notwithstanding a stop on the hill.

*Pedalled

The Lightweight Events.

Events Nos. 1 and 1a were for machines having a cubical capacity not exceeding 340 c.c. for twin and 300 for single-cylinder, maximum weight of machine 130 lbs., two or three speeds or fixed gear. No pedalling allowed. Results worked on A.C.U. formula and fastest time.

Class 1 consisted almost exclusively of Douglas machines. W. Douglas appeared to make the fastest ascent, a contrast to Eli Clark, who followed him. Clark was much slower, his heavier weight naturally making an appreciable difference. Gibb came up in good form sitting on the carrier; Wasley, another Douglas rider, was making a steady ascent when H. G. Dixon, on a two-cylinder New Hudson, with m.o.i.v. Jap-Junior T.T. engine, came up at a splendid pace, rapidly overhauling him. He only succeeded in avoiding the Douglas rider by a hair's breadth. Kickham, Ball, and Fletcher, all on Douglas machines, made excellent performances. In class 1a W. Moore (2 h.p. Humber), came up well. H. Berwick, on a similar machine, changed down and then pedalled. A. J. Stevens (A.J.S.) made a good ascent. Dixon-Davis (A.J.S.) came up well. The A.J.S. machines ridden by Fair and Adams were disqualified for exceeding the weight limit (130 lbs.) Woodhouse (New Hudson) stopped, float chamber dry.

Event 2, for touring machines with engines for single-cylinder machines not exceeding 500 c.c. and 750 c.c. for multi-cylinder machines, two or three speeds or fixed gear, pedalling prohibited. Results on A.C.U. formula and fastest time.

Douglas and Eli Clark, both on Douglas machines, came up in excellent style. Gibb, who was similarly mounted, took his hand off the handle-bars to change speed on the second bend, when he swerved and fell, leaving the machine with

The Bristol B. and M.C. Hill-climb.—

H. Reed (Dot) overtaking F. C. Wasley (Douglas) in Class 2, and narrowly avoiding a collision by passing Wasley on the wrong side. If the Bristol Club officials did err, it was in sending the competitors up the hill too quickly.

e engine running in the road. He picked it up with the gine still buzzing merrily round, when it suddenly left him d charged the nearest grass bank, much to everyone's nusement. Brewster's performance on the Norton was the xt to create excitement, as his speed and magnificent iving called for universal admiration. B. Yates (Humber) me up well on top speed. G. A. Barnes, the old racing an, whose name is now more often associated with flying an motor cycle riding, seemed hardly at home on his two-eed Humber, since he nearly stopped by depressing the ake instead of the low speed pedal. Kellar (Triumph) came well, as did also Percy Butler (Dot) and Smytheman .M.C.) Slaughter (L.M.C.) evoked much enthusiasm by s splendid riding and equally splendid speed. Heiss riumph), Wasley (Douglas), who changed down, and Cates umber) all made good ascents. H. Reed (two-cyl. Dot) arly came to grief, and only saved himself by cutting in the wrong side, and even then there was nothing to spare. od driving and a fine display of nerve alone saved the uation. Ommaney (Rudge) came up well, but took the rners rather wide. B. A. Hill (Rudge), J. Gibson (Rudge). ilner (Triumph), F. Ball (Douglas), Fletcher (Douglas), Fair .J.S.), Adams (A.J.S.), and Dixon-Davis (A.J.S.) all made od ascents. Result of Class 2:

1.	H. Reed (2-cyl. Dot-Jap)	X
2.	J. Slaughter (L.M.C.)	3½s.
3.	P. Brewster (Norton)	3⅘s.
4.	A. L. Ommaney (Rudge)	12⅘s.

J. Slaughter was disqualified for using an inefficient silencer, d the decision is awaiting the B.B. and M.C.'s committee eting, as Slaughter protested against the judge's ruling. e machine used was the same one he rode at the Sutton nk, Coventry, Oxford, and other hill-climbs.

Event 3.—Touring Class.

For touring machines with single-cylinder engines not eeding 500 c.c., fixed gear, no pedalling allowed, T.T. chines excluded. Results on A.C.U. formula and fastest time. Brewster (Norton) again made a star performance, while ughter (L.M.C.) appeared to make an equally good ascent, superb corner work being especially admired. J. Milner iumph) took the corner a trifle wide, but managed satisorily, while R. C. Moore (Humber) stopped. S. Wright mber) made a good ascent. J. Kellar (Triumph), P. ler (Dot), H. W. Smytheman (L.M.C.), E. C. Heiss iumph), A. L. Ommaney (Rudge), and J. Gibson (Rudge) came up in good form. Result on time:

1.	P. Brewster (Norton)	X
	Fastest single-cylinder.	
2.	J. Slaughter (L.M.C.)	7s.
	Slaughter disqualified as in Event 2.	
3.	A. L. Ommaney (Rudge)	15⅖s.
4.	J. Gibson (Rudge)	20⅕s.

Ladies' Class.

Variable gears allowed. Pedalling prohibited. Result on A.C.U. formula.

Mrs. W. B. Gibb (Douglas) came up past the steep bend in good style. Miss Hind (5 h.p. Rex) came up at a splendid pace, and Mrs. Baxter (3½ h.p. Rex) ascended the hill almost as well. The event created much interest, and the fair competitors were warmly applauded.

The exact times were not announced, but Miss Hind's was the fastest.

Racing Class.

Machines fitted with single or multi-cylinder engines, not exceeding 1,000 c.c. Variable gears allowed. Pedalling not permitted.

Fastest time only. At this point of the proceedings a large number of people had congregated round the S bend, and the marshals had some difficulty in controlling them. Eventually, however, the majority were persuaded to take up safe positions. Brewster again made a stirring ascent, A. J. Luce (twin Bat) came up well, but was somewhat unsteady at times. Miss Hind (7 h.p. Rex) made her ascent in excellent style, and the same may be said of Slaughter (L.M.C.), Reed (twin Dot), and Newsome (Triumph). But the best performance was made by A. J. Moorhouse (Indian), who came up at such a tremendous speed that he had to switch off at the bend. He was received with much enthusiasm. Ommaney (Rudge) came up well, and Kickham (twin Peugeot) came up so fast he too had to switch off at the corners. Clement (twin Bat) had to do likewise. McMinnies (Triumph), who was the only rider to strip his machine, had the bad luck to be pulled up while quite low down on the hill owing to a valve cotter failing out.

1.	A. J. Moorhouse (Indian)	X
	Fastest time of the day.	
2.	H. Reed (Dot)	3½s.
3.	W. F. Newsome (Triumph)	5⅕s.

Class 6, for passenger machines, was cancelled owing to lack of adequate support. Rumour was now current that Moorhouse had climbed the hill in 59s., and that Reed, Newsome, and Brewster came next in order of speed.

W. F. Newsome (3½ h.p. Triumph), who captured the hour single-cylinder record on Wednesday last week, and was the fastest rider in the single-cylinder racing class at the Bristol Club's hill-climb at Bath.

The Bristol B. and M.C. Open Hill Climb.—

Event No. 7 was also for racing motor bicycles, and was run under the same conditions as event No. 6, except that it was restricted to single-cylinder machines not exceeding 500 c.c.

The star performers at this stage seemed to get a trifle jaring, for though Brewster again made a splendid climb, Slaughter wobbled and Newsome swerved badly. Butler came up well but steadily, while Babington (Bat) was slower still. Haskins on the T.T. Singer came up in good style, and the redoubtable Stanley soared up at a terrific pace, but with his stand on the ground. While leaning over to take the second curve of the S, he swerved, and though he made a gallant effort to recover himself he was brought to a stand still farther up the hill. McMinnies on this occasion climbed the hill in good style, while Ommaney and Gibson, both on Rudge machines, and Milner, on a Triumph, also made good ascents. Result on time:

1. W. F. Newsome (Triumph) X
2. W. G. McMinnies (Triumph) ... ... $\frac{1}{5}$s.
3. P. Brewster (Norton) ... ... $1\frac{2}{5}$s.

Members' Event.

This was open to members of the Bristol Bicycle and Motor Club, and was for solo and passenger machines, the limit for the former being 500 c.c. Variable gears allowed. Machine to be the property of the owner. There were no entries of passenger machines, and the results were to be calculated on A.C.U. formula.

W. Douglas for the third time came up in splendid style. Eli Clark, another Douglas rider, was not so fast. J. B. Kellar (Triumph) climbed the hill excellently, but on this and other occasions he evoked attention by the curious way in which he held the handle-bars of his machine. Haskins (T.T. Premier) also came up in good form. Of the two Humber riders, Moore and Cates, the latter came up comfortably on top speed, while the former dismounted. Of the other Douglas riders, Wasley used the low speed, while Kickham came up in splendid style. The three A.J.S. machines, ridden by Fair, Adams, and Dixon-Davis, climbed the hill in good form. Durnford (Triumph) dismounted.

The last event, No. 9, took place after nearly all the spectators had departed, in a heavy rainstorm. It was for amateurs according to the A.C.U. definition of a private owner, and was open to machines not exceeding 130 lbs. in weight and of a cubic capacity limit of 340 c.c., for single or multi-cylinder engines. Variable gears allowed and pedalling prohibited. Results on A.C.U. formula. Prizes presented by Mr. Eli Clark.

Four Douglas machines took part. Fletcher came up in good form; Wasley, as before, had to use his first speed, while the Rev. E. Perry Greenhill missed his gear on two occasions and stopped.

Messrs. Cooper and Ross did their utmost to despatch the men quickly, but much delay was occasioned by the absence of any organised system of flagging. However, there was a splendid entry and an appreciative crowd of spectators to watch the several performances, while no better hill could have been chosen. The chief officials were: Judges, Dr. Patterson and Messrs. R. F. G. Kelly and A. M. C. Scott; timekeepers Mr. A. Deacon at the foot and Mr. F. Straight at the summit of the hill; and Mr. P. Grout, hon. secretary.

J. Milner carried a round of ammunition on his back to make up weight, and Miss M. Hind carried stones for the same purpose. Stanley carried sand in a bag slung over his shoulders.

A. J. Luce was number thirteen and met with a nasty fall before the climb, cutting both knees.

We are asked to state that a competitor who received the time slips from Mr. Prosser with the intention of taking them to Mr. Straight did not give them up, with the result that the formula results were delayed and cannot be announced in this report.

A long, straight stretch on Lansdown Road Hill, where some high speeds were witnessed.

Competitors in the Middlesbrough M.C.C. hill-climb at Castleton, the results of which are given on our "Club News" pages.

Spring Quarterly Trial. The Judges' Report.

THE second of the series of Quarterly Trials for this year was held on Saturday, the 22nd April, over a new course, starting from Harrogate. The entries numbered 46, of which 42 started.

Fourteen machines made complete non-stop runs, 12 being motor bicycles and two motor cycles with sidecars. Only six first-class certificates were awarded, two being given to passenger machines which made non-stop runs and four only to motor bicycles, the remaining eight having lost the highest award, six of them by reason of failure to climb the test hills at the set speed, one by having the magneto unprotected, and one by the exudation of oil, to a considerable degree, from the auxiliary exhaust. Thirty-three competitors obtained certificates of performance only.

This was the first trial held by the A.C.U. in which the highest award was only to be obtained by machines fitted with a variable gear or clutch, and it is interesting to note that of the 42 starters, six only had a single speed without clutch. The other machines were fitted with gears as follow:

N.S.U., 6; Phelon and Moore, 3; Millenniun, 3; Zenith, 3; Free-engine Clutch, 3; Kerry-Abingdon, 1; Enfield, 1; Indian, 1; Morgan, 1; Scott, 2; Armstrong, 3; Roc, 2; Douglas, 1; Osborne, 1; A.J.S., 2; Clyno, 1; Chater-Lea, 3; A.C., 2.

Thirteen motor bicycles failed to climb Sutton Bank, and three were assisted by pedalling or by the competitors using their feet, and three passenger machines either failed completely or only ascended the steep part without the passenger. Although Lythe Bank had a bad approach, all the machines succeeded in ascending it, and only two cycles were pedal-assisted. This is to be accounted for by the fact that the riders, having left Whitby only a short time before, had kept their engines comparatively cool and in good condition for ascending hills. Only one single-geared motor bicycle completed the trial without an involuntary stop. Upon examination of the machines at the conclusion of the trial it was noticed that quite a number had extremely dirty crank cases. This was due to badly fitting, leaky tappets, and to the excessive oiling which was occasioned by the hilly nature of the course. But one engine, in which the tappets had been specially ground in, was seen to be, unlike all the rest, quite clean. The auxiliary exhaust ports of some of the machines exuded a great deal of oil, but here again there was one exception, which had the ports properly fitted. It seems, therefore, that oil on the crank cases and at the exhaust ports can be avoided quite successfully by grinding in the tappets and seeing that the auxiliary exhaust ports fit well and tightly. One machine was fitted with two single-pole plugs in series, and had also, to keep the cylinder fast to the crank case, the nuts secured with split pins.

The Rudge starting device, which consists of a chain carried on a wheel on the bottom bracket to a smaller chain wheel attached to the timing gear, appeared to answer well, while the cranks were so arranged that by a slight movement the pedals came on a same level and acted as a second pair of footrests.

Quite a number of machines which were fitted with chain-drive had the chains exposed or only partly protected, but the Clyno had extremely efficient aluminium guards, which entirely enclosed the chains, and yet were easily removed. This machine had also an ingenious kick-starting device, and a pipe leading from the exhaust to the oil tank, in order to warm the oil in cold weather.

H. G. COVE,
D. K. HALL, Judges.

CLUB NEWS.

Scottish Border M.C.C.

The results of this club's hill-climbing competition held last Saturday at Lanton were as follows:

CLASS 1. Lightweights.—T. Gillies (2¾ h.p. Douglas).
CLASS 2. Singles (unlimited).—B. Smith (3½ h.p. Bat-Jap).
CLASS 3. Multi-cylinders.—W. J. Burn (5 h.p. Indian).

North-west London M.C.C.

The flexibility hill-climb was run off on Saturday last on a hill near Northaw and attracted a very good entry which was divided into three classes—lightweights, singles, and multi-cylinders. The hill was about five-eighths of a mile long, the steepest portion of which was about 1 in 8. The timing was in the hands of Messrs. Davison and Karslake, and was worked on a system of Mr. Davison's, which makes mistakes nearly impossible. The results were:

Lightweights.—1, Thomas (2¾ h.p. Douglas). Mr. Thomas, who is nearly sixty years of age, and only started motor cycling last year, rode with excellent judgment.
Singles.—1, Colliver (3½ h.p. Zenith).
Multi-cylinders.—1, Simpson (7 h.p. Indian).

The twenty-seven entries obtained are very good for a private club, and the event was greatly enjoyed.

Northern League of Motor Cyclists.

At a council meeting on the 29th ult., held at Leeds, at which delegates from several clubs were present, the amended results of the Staxton hill-climb were approved, and the prizes ordered to be distributed at once. After considerable discussion it was decided to drop the speed trials arranged for June 10th and substitute in their stead the individual reliability trial previously fixed for May 21st. The date of this trial will be June 11th and the course as follows: Starting from York, Garrowby, Driffield, Staxton, Seamer, Scarborough, Whitby (lunch), Saltburn, Stokesley, Thirsk, Harrogate, and York. All Northern clubs are invited to attend a monster meet of the League at the Feathers Hotel, Pocklington, on May 21st. Mr. W. S. Lamb, hon. secretary of the Pocklington M.C.C., would be glad to hear from clubs as to the number likely to be present, in order that he may be able to make the necessary arrangements for lunch.

Essex M.C.

Next Saturday there will be a run starting from headquarters at 3.30 p.m. to Chislehurst Caves, which are of great antiquarian interest. The party will be under the charge and guidance of Mr. Sweet.

Belfast and District M.C.C.

A hill-climb was held at Bangor, Co. Down, on Saturday last. W. J. Chambers, riding a 3½ h.p. B.S.A., proved the winner; 2nd, B. Hobson (3½ h.p. Triumph); and 3rd, W. McKee (3½ h.p. Premier and sidecar). Hobson and McKee tied in the first trial. J. Stewart (3½ h.p. Triumph) accomplished fastest time. The contest created great interest locally.

A good gathering of competitors and spectators at the Birmingham M.C.C. Hill-climb on Saturday last.

Club News.—

The two winners of the Leeds M.C.C. Beulah Hill-climb.* Right, C. Jessop (Triumph), winner of the Kirk Trophy; S. Grange second.

Derby and District M.C.C.

On Saturday next a speed judging competition will be held over a ten-mile course, starting at 3 p.m. The headquarters for the trial are at the Great Northern Hotel, Mickleover.

Leeds M.C.C.

The annual Leeds-Beulah hill-climb for the Kirk Trophy was won last Saturday by C. Jessop on a 3½ h.p. standard Triumph, S. Grange on a 3½ h.p. T.T. Triumph being second.

Burnley A.C.

Thorneyholme Brow was the venue of the club hill-climb which took place on the 22nd ult. The prize winners were—Lightweights, H. Hebden (2 h.p. Humber), and single-cylinders, J. A. Boothman (3½ h.p. Triumph).

Nottingham and District M.C.C.

The final results of the Hardwick hill-climb, which was briefly reported in the issue of April 20th, have worked out as follows: 1, L. Smith (two-cylinder N.S.U.); 2, G. Brough (3½ h.p. Brough); 3, E. G. Young (2½ h.p. Motosacoche); 4, J. D. Mitchell (3½ h.p. Triumph). There were fifteen starters.

Shropshire M.C.C.

An interesting competition was held on the 23rd ult., when members were set the task of coaxing an ancient 3½ h.p. Ariel up Wenlock Edge without any adjustments being allowed. The contest proved to be as amusing as it was instructive, as the lack of familiarity with the machine's accumulator ignition proved the undoing of many of the less experienced riders. The first prize, a Michelin Trident cover, presented to the club by the manufacturers, for completing the longest distance, was won by H. W. Hardwick.

Middlesbrough and District M.C.C.

A hill-climb was held at Castleton recently, J. Dale (3 Rudge) proving the winner.

Wansbeck M.C.

Two hill-climbs, fast and slow, were the programme fo the opening meet of the above club on Good Friday a Weldon Bridge. The winners were as follows: Fast—T. W Hall (3½ h.p. Bradbury), 1m. 12⅘s. Slow—L. Patton (4 h.p J.A.P.), 4m. 37s.

Edinburgh and District M.C.C.

Last Saturday the club held its opening run to Peebles and if the enthusiasm shown upon this occasion should b maintained, there is little doubt that the future success o the club is well assured. Tea was taken at the Peebles Hydro, where Mr. Duthie, a director, photographed the party

Purley and District M.C.C.

A hill-climb was held at Titsey on Saturday, despite drenching rain. Fastest time was made by H. Cooper (Bradbury). In the passenger class, only one machine su ceeded in surmounting the hill, this being the P. and M. an sidecar, driven by W. Pratt.

Coventry and Warwickshire M.C.

Entries for the Amateur *v.* Trade Trial on May 13th clos on Saturday next. The following is the composition of th teams up to the present:

Amateurs.—J. R. Haswell, G. T. Mills, S. H. Davis, A E. Catt, Geoff. Smith, A. Elson, P. W. Johnson, C. T Lloyd, A. Mackenzie-Cott, H. M. Carter, and H. J. Dixon

Trade.—C. S. Burney, A. L. Ommaney, W. W. Dougla W. F. Creyton, A. V. Sumner, G. E. Stanley, Bert Yate Sam Wright, Roy W. Walker, and A. W. Walden.

Entry fee is 2s. 6d., and forms may be obtained from th hon. sec., Mr. G. Smith, 19, Hertford Street, Coventry.

Streatham and District M.C.C.

Tilburstow, near Godstone, was the venue of the club spring hill-climb last Saturday. The sixty competitors we divided into seven classes, of which the following were th respective winners:

Class 1. Lightweights up to 340 c.c.—A. S. Bright (2¼ h. New Hudson), J. Bodega (2½ h.p. Grandex), and W. C Oldman (2¾ h.p. Douglas).

Class 2. Touring machines up to 500 c.c.—F. W. Barn (2½ h.p. Zenith-Gradua), H. Johnson (3½ h.p. Triumph), an B. Patterson (3½ h.p. Brown).

Class 3. Touring machines up to 1,000 c.c.—S. T. Tessi (5 h.p. Bat), F. W. Barnes (6 h.p. Zenith-Gradua), and H. Wright (5 h.p. Rex).

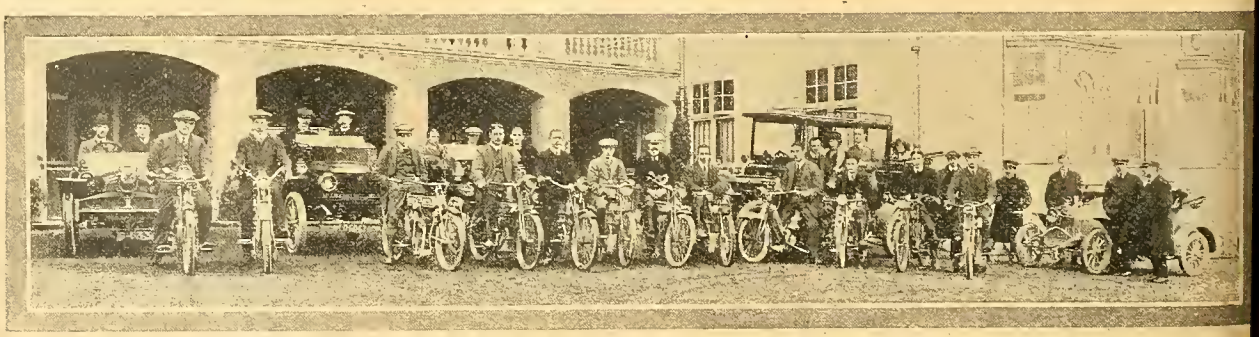
Class 4. Racing machines up to 500 c.c.—F. Goodac (3½ h.p. Triumph), B. Patterson (3½ h.p. Brown), and F. W Barnes (3½ Zenith).

Class 5. Racing machines up to 1,000 c.c.—S. T. Tessi (5 h.p. Bat), F. W. Barnes (6 h.p. Zenith), and H. Hunt (5 h.p. Bat).

Class 6. Passenger machines.—F. W. Barnes (6 h. Zenith and sidecar), E. B. Ware (8 h.p. Chater-Lea and sid car), and G. F. Hunter (8 h.p. Zenith and sidecar).

Class 7. Machines prior to 1908.—F. W. Barnes (3 h. Zenette).

The results, except in the racing classes, were decided o the A.C.U. formula, and are subject to revision by th committee.



Members of the Edinburgh M.C.C. assembled at the Peebles Hydro on the occasion of the opening run last Saturday. *Photograph by J. F. Duthie.*

Members of the Norwich and District M.C.C. who participated in the 100 miles reliability trial for the Thorn Cup.
(See page 433 last issue.)

Leven and District M.C.C.

This new club was formed on the 1st March, when twenty-ght members were enrolled. The headquarters are the ledonian Hotel, Leven, and all motor cyclists in the ighbourhood desirous of joining should communicate with e secretary, Mr. W. Hogg, Leven, N.B.

Woolwich and District M.C.C.

At the recent general meeting of this club Mr. S. Lloyd as elected assistant hon. secretary, and it was also decided have a recognised ladies' day once a month, but it should understood that their presence at any club run will be lcomed.

Western District M.C.

A reliability trial will be held on May 7th to Bath and ck for the "Smart" Cup, starting from the Milford otel, Isleworth. One hour stop will be allowed at Bath. otice of entry should be sent immediately to the hon. sec., r. J. Victor Armstrong, Eden Hall, Montpelier Road, ling, W.

Bishop Auckland, Darlington, and District M.C.

On May 7th there will be a reliability trial to Alston, rting at Spring Gardens, near West Auckland, and pro-eding *viâ* Witton-le-Wear and Killhope, returning *viâ* ngton Beck, Romaldkirk, and Barnard Castle to Staindrop. is competition is the first of the series for the Smith llenge trophy, and in addition to the club prize, a special ze of a pair of tyres for the best performance of the day l be given by the Kempshall Tyre Co.

Sutton Coldfield A.C.

The annual hill-climb will take place on Saturday, May 20th, d extra prizes will be awarded in each class for the best formance of a novice. There will be four classes for motor les as follows: (1) Lightweights (singles and twins, T.T. ulations), (2) single-cylinder touring machines, (3) twin, and T.T. machines (singles and twins, T.T. regulations). There l also be two separate classes for motor cars.

n this event members of the cycle classes gaining first, ond, or third places will score marks for the Ariston Trophy referred to in these columns on the 20th ult. Full particulars may be had from the trials hon. sec., Mr. James St. John, 33, Fountain Road, Edgbaston.

HERTS. COUNTY A.C. OPEN HILL-CLIMB.

The above open event is to be held on Saturday next, the 6th inst., starting at 2.30 p.m., the venue being secret. The club has separated the competition into two divisions, A and B. A is open to all types of motor cycles, and B is only open to riders who have not won a prize in a hill-climb with a standard touring motor bicycle.

DIVISION A.

Open to all types of motor cycles.

Class I.—Lightweights, up to 110 lbs.
Class II.—Single-cylinders, 146 lbs., 300 c.c.
Class III.—Twin-cylinders, 146 lbs., 343 c.c.
Class IV.—Single-cylinders, up to 554 c.c.
Class V.—Any single-cylinder.
Class VI.—Twin-cylinders, 750 c.c.
Class VII.—Any twin-cylinder.
Class VIII.—Any machine (fastest time to win).
Class IX.—Passenger motor cycles.
Class X.—Flexibility test. Open to any machine. Clutches not to be used. In this class competitors must have competed in one of the above classes, when the gear ratio used will be noted.

Classes I. to VII. and IX. will be decided on A.C.U. formula.

DIVISION B.

Class I.—Lightweights, up to 110 lbs.
Class II.—Single-cylinders, 146 lbs., 300 c.c.
Class III.—Twin-cylinders, 146 lbs., 343 c.c.
Class IV.—Single-cylinders, fitted with pedals, 554 c.c.
Class V.—Single-cylinders T.T., 554 c.c.
Class VI.—Any single-cylinder.
Class VII.—Any twin-cylinder.
Class VIII.—Any machine (fastest time to win).
Class IX.—Flexibility test, as in division A.
Classes I. to VII. will be decided on A.C.U. formula.

Members who took part in the opening run of the Newport and District M.C.C.

Change of Address.

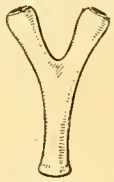
Messrs. Dirfrees, Ltd., the well-known manufacturers of the Dirfree over-boot and legging combined, are now installed in their new premises at 28, Martin's Lane, Cannon Street, E.C.

A Handle-bar Mascot.

H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W.C., have just introduced the handle-bar mascot, which

A neat handle-bar mascot.

we illustrate. It is made of white metal and is provided with a clip to fasten it to any convenient point on the bar, and gives quite a distinctive appearance. Another useful accessory sold by the same firm is a two-way connection which enables a generator with single tap to be used in conjunction with two lamps. Both articles sell at very modest prices.



Two-way generator connection.

Carburetters in the Quarterly.

Ten of the fourteen successful machines in the Quarterly Trials were fitted with B. and B. carburetters. This well-known gas making machine is so universal on modern motor cycles that riders are perhaps apt to overlook the fact that much depends on good carburation.

Continental Tyre Co.'s New Home.

By the time these lines appear in print the Continental Tyre Co. will have removed to their new premises in Thurloe Place, opposite the Oratory and close to Brompton Road Station. These buildings are of such a size as to accommodate suitably and adequately the large and flourishing firm for which they have been constructed.

Dry Battery Ignition on Road and Track.

F. A. McNab, who finished second in the 70 m.p.h. handicap at Brooklands, on Easter Monday, and won the relay race on the 26th inst., used Hellesen dry battery ignition. The battery used by Harold Karslake in the London-Land's End run was a Siemens-Obach, size G.R. 3, one of which sufficed for the double journey without trouble.

London-Land's End-London Run.

A. J. Moorhouse, winner of the Jarrott Cup, used Continental tyres on his Indian.

Engine Flexibility.

One of the most notable examples of engine flexibility yet recorded was shown in the recent Western District M.C. hill climb, when C. Gordon Bell made fastest and slowest times on his 490 c.c. (3½ h.p.) Norton.

A Route Card Clip.

Harry G. Bell, 106, Great Portland Street, W., has sent us the latest example of his route card clip, which has been improved by the addition of a screw and winged nut which allows the portion encircling the handle-bar to be tightly locked in position. These route card clips are in strong demand by motor cyclists who take part in long distance reliability trials.

An Ingenious Terminal.

Messrs. A. W. Gamage, Ltd., Holborn, E.C., have placed on the market an ingenious magneto terminal. As will be seen by the illustration, it consists of two portions. To attach the terminal it is merely necessary to insert the brass

A new pattern terminal for Bosch and Simms magnetos.

block and get the two holes concentric. Then, if the milled screw be turned, the terminal is firmly fixed and cannot shake loose. Messrs. Gamage have also introduced a very carefully made piston ring in all sizes, which is well finished and accurately ground.

A snap during the Kirkstone Pass hill-climb, which gives some idea of the magnificent views obtainable in this popular touring district.

THE MOTOR CYCLE

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ADDRESS 20, TUDOR STREET, LONDON, E.C.

The New Six Days' Record.

THE long distance ride which is described in our columns this week is unparalleled in the history of the pastime; it is therefore worthy of a short article setting forth its object and the rider's reason for breaking his own record of last year fore he was forestalled by other attempts. Mr. tt's laudable object is to prove the thorough reliaity of the motor cycle as a means of rapid transit ner for business or pleasure purposes, and no one can y he has amply achieved his ambition. His purpose setting the record as high as he could is to make it safe as possible before difficulties arise which would likely to stultify other equally praiseworthy efforts. keep within the limits of prudence further attempts this record must necessitate the rider being longer the road, which means that he must be content with s sleep. On the other hand, if the speed be inased there must come a time when the authorities l prohibit these performances owing to the speed ng too high for public safety.

While on this subject, we may take the opportunity explain our position in the matter. We are, of rse, in duty bound to record such an important feat the motor cycle world of sport, and feel it incumt to render our assistance in checking by receiving proofs of the ride in the form of postal messages warded to our offices, but while the law with regard speed remains as it is, it is impossible for us to ard the record altogether with a favourable eye. wever, one cannot fail to admire the rider's pluck l stamina in remaining in the saddle for so many rs, and the reliability and speed of the splendid chine which assisted him to accomplish his self-imposed task. The record rider's average speed is, of course, exceeded daily under ordinary touring conditions and without the slightest danger to anyone, the chief point being his faculty of discriminating between the moment of expediency and recklessness in speed. Some day we hope the Legislature will give motorists the credit for possessing ordinary intelligence and abolish speed limits, leaving offenders to be punished in the same manner as other road users, viz., by the ordinary law of the land. At present the poor motorist is liable to both ordinary and special measures, the latter being quite unnecessary.

We think it is opportune at this stage to suggest that as the Auto Cycle Union cannot, owing to its official position as the governing body of the sport, recognise records such as the one under review, steps might be taken by those interested to establish an association like the Road Records Association. This body officially checks records made by pedal cyclists, which the National Cyclists' Union, by reason of its recognised place in the sport, refuses to tabulate. Something of the kind will have to be done before long, and the sooner the better. We have heard that one or two riders have expressed a determination to improve on last week's figures, and we should like to point out to such aspirants to fame that the record holder has been seldom accompanied: anything savouring of organised assistance in the form of followers, etc., should therefore be carefully avoided, as tending to attract the arm of the law.

Prospective candidates for record honours should also bear in mind that the holder is a man who is always thoroughly fit, and thinks no more of a journey like Northampton to Bath and back after lunch than an ordinary rider does of a hundred miles.

M.C.C. INTER-CLUB TEAM TRIAL

FOR "THE MOTOR CYCLE" CHALLENGE CUP.

THE regulations for the 1911 team trial, to be held on Saturday, June 17th, starting at 1 p.m., have now been issued to all motor cycle clubs in the kingdom, and entries are invited. In many ways the trial will differ from previous contests for the coveted trophy.

First and foremost, watches and speedometers will be barred.

The course will be selected by the timekeeper, and will be measured by him on the morning of the event.

Reliability, *i.e.*, all six riders of a team covering the whole course of 100 miles without a stop, is the essence of the trial. Should, however, more than one complete team cover the whole course non-stop, the team riding nearest to the average of twenty miles per hour shall be the winner.

The headquarters will be at a town some sixty miles north-west of London, and the course in the vicinity thereof.

There must be at least one passenger motor cycle, either tricar or sidecar, among the team of six. The joint weight of passenger and driver shall not be less than 20 stones.

No replenishments may be taken up after starting in the competition, but competitors may replenish the tanks from a receptacle carried by them, provided such replenishment is effected while the machine is in motion.

"The Motor Cycle" Fifty Guinea Challenge Cup.

The original trophy was won outright by the Coventry and Warwickshire M.C. in 1908. Two years ago the cup was replaced by another of fifty guineas value, and this was won for the first time by the M.C.C. Last year the Coventry and Warwickshire M.C. again wrested the trophy from the M.C.C. If the cup be won three times, not necessarily in succession, by the team representing any one club, it shall become the absolute property of that club.

Gold medals will be presented to each member of the winning team, and silver medals to the riders of every team making a full mileage score.

The entry fee is two guineas per team up to first post June 7th, or up to first post June 10th three guineas.

The Auto Cycle Union has granted a special permit for the competition.

It is a strange fact that either the M.C.C. or Coventry Club has won on every occasion, but it is unlikely that history will repeat itself.

Notification has already been received from the under-mentioned clubs of their intention of competing:

Coventry and Warwickshire M.C.
Birmingham M.C.C.
Bradford M.C.C.
Herts. County A.C.
North Middlesex M.C.C.
Surrey M.C.C.
Bristol B. and M.C.
Derby M.C.C.
Norfolk M.C.C.
Sheffield and Hallamshire M.C.C.
Sutton Coldfield A.C.
Motor Cycling Club.

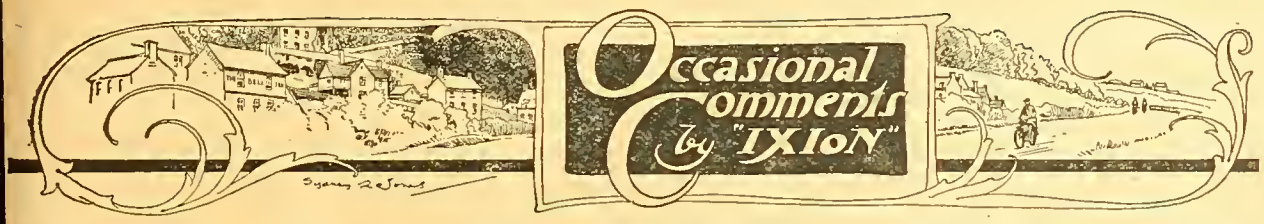
The trials hon. sec. is Mr. J. van Hooydonk, "Spring Villa," North Finchley, N

THE PEDLEY TYRE.

EARLY in the New Year we were requested by the firm of J. Pedley and Son, Ltd., Great Charles Street, Birmingham, to subject one of their three-rib motor cycle covers to an extended trial on one of our machines. Unfortunately we had no machine at liberty on which to test this cover until the beginning of March, but since that time it has been in continuous use on the driving wheel of a 3½ h.p. roadster, and has covered up to date 1,200 miles, registered by Cowey speedometer. The cover has a moulded three-rib tread, and is quite proof against sideslip; moreover, the ribs still stand up well above the remainder of the tread, and although they have, of course, worn, they appear good for at least another thousand miles. We had occasion to remove a portion of the cover a few days ago to repair a double puncture caused by a horseshoe nail, and found the cover easy to detach and replace, not the least desirable feature of a pneumatic tyre. After our experience we are able to say the Pedley tyre is one we can confidently recommend to our readers who may be considering the purchase of new tyres.

A NEW PATTERN RUNABOUT.

ON the occasion of a recent visit to the Chater-Lea Manufacturing Company's Works, 116, Golden Lane, E.C., Mr. Chater-Lea informed us that he was at present constructing a two-cylinder 8 h.p. runabout or light four-wheeled type of quadcar, which will be fitted with the Chater-Lea 8 h.p. air-cooled engine, which has lately distinguished itself so signally, especially in the Quarterly Trials. This engine will be set transversely in the frame at the front, and the magneto and carburetter will be behind. The clutch is of the well-tried 9in. leather-to-metal pattern, and universal joints will be placed between it and the gear box, which is of the well-known Chater-Lea three-speed type. The final drive from gear box to back axle will be by worm gear, with the worm placed above the axle. The worm gear is an excellent piece of work which runs on ball bearings and has two sets of thrust bearings at the rear. This machine Mr. Chater-Lea proposes to drive in the M.C.C. London to Edinburgh run. Its power unit has been well tried on the well-known No. 7 Chater-Lea motor bicycle.



Carburetter Chimneys.

It is worthy of record here, that a device urged in these columns on so many occasions is at last being largely used by competition riders. I refer to auxiliary air carburetter chimneys, the end terminating in the region of the saddle, so that pure air, free from dust and foreign matter, is drawn into the engine. Some day they will be standard.

Speed in Long Distance Records.

In view of the alleged high speeds maintained in certain record rides, it is interesting to examine the actual times of a famous ride, of which the timekeeper has kindly supplied full details. On the first day the rider was "out" for 14½ hours, during which he covered 305 miles, *i.e.*, his gross average was slightly in excess of legal limit without deductions for stoppages; but the figures imply no speedier work than the average fast tourist normally accomplishes on long runs.

His highest average on this day was performed up to the first check, and works out at 55 miles in 105 minutes; the lowest average was 31 miles in 105 minutes, which included crossing London. On the second day his fastest spin consisted of 28 miles in 35 minutes across particularly open country, and taking the schedule right through, he may be said to have averaged close on 30 m.p.h. wherever the roads were fairly empty. Of course this is rather under the average pace of an End-to-end record under modern conditions, and it cannot be called a dangerous speed, provided the rider is not so exhausted that his faculties become blunted and numbed.

I should say that many tourists and competitors in big A.C.U. events normally sustain an equal average between stoppages, in spite of slowing down through towns and villages and when passing other road users. The sole element of danger consists in two factors, which are neither constant nor omnipresent. The one is the recklessness of certain riders who may be tempted to emulate these records without possessing the restraint and commonsense of the genuine crack riders; the other is the impairing of a good rider's faculties by sheer physical exhaustion.

Pinhole Punctures.

Can any reader supply a good tip for the prompt discovery of "pinhole punctures"? Minute punctures of the sort which deflate a fully-inflated tyre in two or three miles running are not too easy to locate on a quiet fine day, though it is usually possible to feel the puncturing instrument by going over the inside of the cover with a dry clean hand, or alternatively to hear the tiny fizz of escaping air by stretching the tube after blowing it up fairly hard.

But last week I was afflicted by three practically simultaneous pinhole punctures in pouring rain miles from anywhere. I took out the tube, but my hands got so wet and cold and gritty that they lost all sense of delicate touch, and I could not feel any pin or wire projecting through the cover, while the sight test also failed. It was impossible to hear any fizz of escaping air, for the heavy rain was making a loud pattering noise, and the wind was positively roaring past my ears. I was using an endless tube, but even if I had been running on butt-enders I dared not have inserted a spare without locating the pin or wire, which I failed to find.

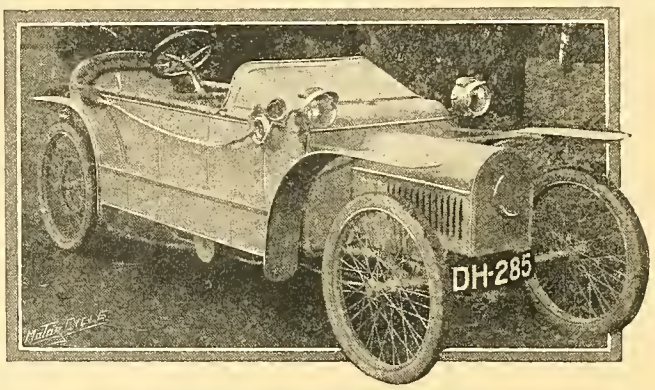
I spent nearly half an hour drying the tube, inflating it, and stretching it, until at last I spotted one hole and the minute bit of wire which had caused it buried in the tread. When I finished my repair and got on the road again, a series of bumps soon warned me I had missed at least one other puncture, and, sooner than renew the weary process, I kept reinflating every six miles, until some twenty miles further on I was able to get under shelter and borrow a bucket of water. Now I am sure I have heard at least one tip which is of service in such circumstances. I fancy one old riding chum of mine used to put a handful of coloured powder—Reckitt's blue or something of that sort—into his tubes, which immediately leaked out through any puncture and automatically located it for him. But perhaps some of our readers can oblige us with a few suggestions. I do not want to be similarly stranded again. No doubt a few correspondents will have something to say about puncture-sealers. Once only did I experiment with any of these, and the only sample I tested rendered it impossible to make a patch stick, so I never repeated the experiment.

Dr. Clifford Gibbons, a prominent member of the Motor Cycling Club Committee and his new fr e-engine Rover

A TANDEM-SEATED RUNABOUT.

AS we have pointed out more than once, we are of the opinion that the runabout type of vehicle, whether designed on motor cycle lines or not, belongs more correctly to the domain of the confessed motor car than to that of the motor cycle pure and simple, at the same time we admit that in many cases the design is so close to that of the motor cycle that a description of the vehicle must be of considerable interest to our readers. Quite one of the most promising tandem-seated four-wheelers which we have yet seen is the Crescent Runabout, manufactured by Crescent Motors, of Pleck Road, Walsall.

Fig. 1 is a view of the complete vehicle, and gives a good idea of the comfortable and decidedly elegant torpedo type body. The neat way in which the belt covers are made to do duty as footboards will be noted, and also the practical scuttle dash, which we found during a most enjoyable run to be highly effective.



(1) The Crescent tandem-seated quadcar.

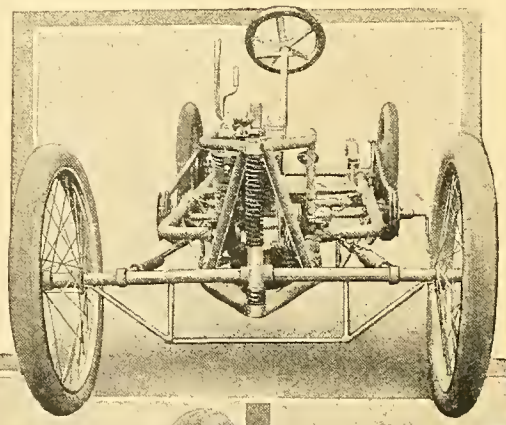
The chassis is built of stout steel tubing, and is sprung in front between a couple of helical springs mounted on the single pivot of the front axle, and at the rear by long half-elliptic rear springs. These details are illustrated in figs. 2 and 4, and the former also shows the spring dashpots which are introduced into the steering mechanism in order to relieve the driver's hands of all jar when sharp inequalities in the road are encountered. The steering is effected by cables which are conveyed from the axle to a wooden drum on the steering column over a pair of pulleys on each side. These cables are fitted in duplicate, and are amply strong enough for their work.

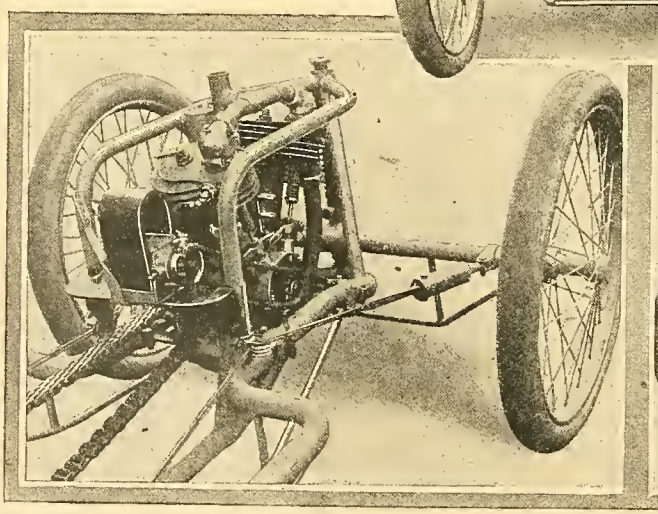
The Power Plant.

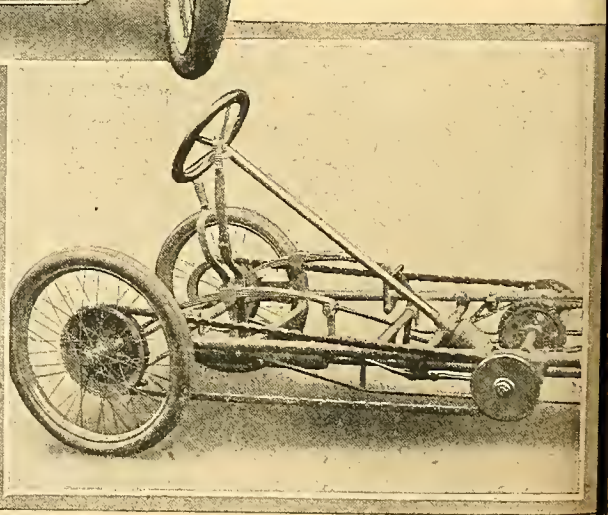
The engine is mounted under a bonnet in front, and is air-cooled. Two powers can be had, either a 5-6 h.p. Peugeot twin, 75 mm. × 75 mm., or a 7-9 h.p., 80 mm. × 94 mm. Bosch magneto ignition and a B. and B. carburetter are fitted. The general arrangement of the power plant is illustrated in fig. 3. From the engine the drive is taken by a noiseless Coventry chain to the countershaft shown in fig. 4, which passes right across the frame and carries at each end an expanding pulley of simple design. These pulleys form in conjunction with the sliding back axle a variable gear between limits of 4½ to 1 and 9 to 1, and there are, in fact, no less than fifteen positive speeds to be obtained between these points. The mechanism of the sliding back axle is made clear by fig. 4. The axle is mounted on one end of each leaf spring, which is connected to the frame by means of a parallel link motion, the main lever of which on each side is connected by a cross-bar. By moving a long hand lever forming the extension of one of the links the axle is advanced or receded, the lever being locked in position by the notches on the quadrant. A second lever is connected to the expanding pulleys. A free engine position is provided, in which the belt runs on a ball bearing sleeve on the pulley axis. It will be noticed from the photograph how well out of the mud and dust are the Whittle link belts.

A foot-operated brake actuates a band which contracts on to a drum bolted to the chain sprocket on the countershaft, and in addition to this there is a hand brake applied by pushing the sliding axle lever into its extreme forward position, the result of this action being to bring the belt rims against leather-covered blocks attached to the frame members.

Throttle, air, and spark advance levers are attached to the steering column in an accessible







(2) The system of front springing.

(3) Power unit, showing twin-cylinder air-cooled engine.

(4) The double belt transmission, and rear axle suspension.

A Tandem-seated Runabout.—

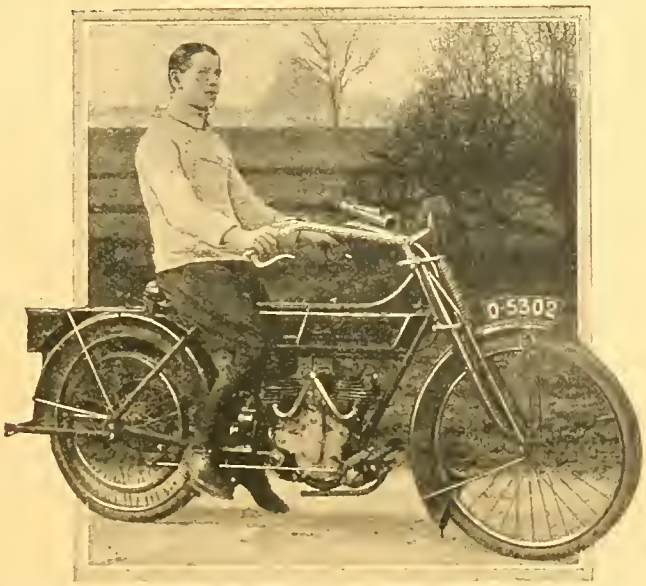
position. Lubrication is by hand pump. The leading dimensions of the machine are: Wheelbase 8ft., length over all 10ft. 9in., track 3ft. 2in., width over all 3ft. 6in., weight under 5 cwts.

A Practical Riding Experience.

With a view to testing the vehicle we made a pleasant little trip upon it, during which we were driven by its designer. We found the running remarkably easy, the cane seats extremely comfortable, the hill-climbing capabilities quite good, and the turn of speed on the level quite up to expectations. The wind resistance on this type of machine is almost negligible. The engine was a trifle noisy, and when allowed to run fast produced a good deal of vibration, but neither of these troubles is insuperable. We came to the conclusion that larger and heavier flywheels would have been an immense improvement. In spite of the length of the Crescent Runabout the large lock given to the front wheels enables quite sharp turns to be made, and it is really remarkable how easily dense traffic can be threaded through at a good speed.

A LOW-RATE INSURANCE POLICY.

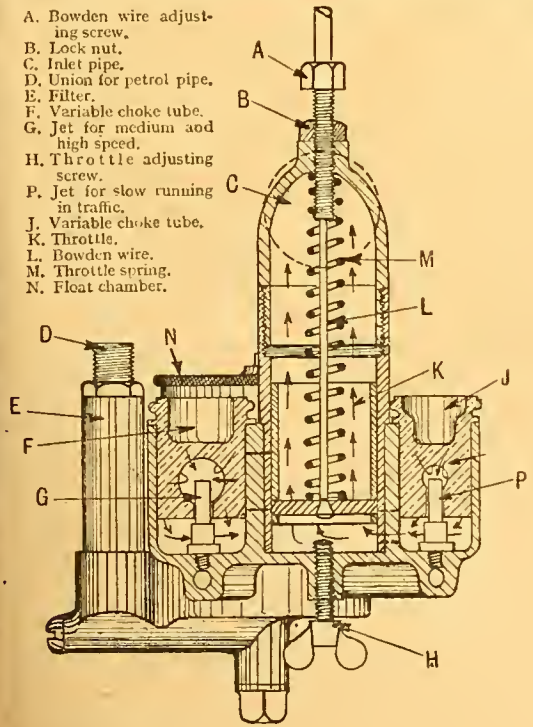
The A.C.U. insurance policy covers third party claims on 3½ h.p. motor cycle up to an unlimited amount; it also includes damage by fire up to £55, loss by theft £55, and touring membership of the A.C.U. for a premium of £1 2s. 6d. per annum. Policies for larger or smaller h.p. can be obtained at proportionate rates. Those who are already members of the A.C.U. can deduct five per cent. from the premium quoted. Prospectuses can be obtained from *The Autocar* Insurance Department, Coventry.



R. H. Viggers, of Banbury, and his new 2¾ h.p. chain-driven Enfield, of which he is a delighted owner. Mr. Viggers was very successful at the Oxford M.C.C. Kop hill-climb, gaining a first and two third places.

The Binks Single Lever Two-jet Carburetter.

THE Binks two-jet carburetter, which has already been referred to in our correspondence columns, has been designed to provide a carburetter for fast as well as slow speeds without any necessity for disturbing adjustments. It is well known that to run slowly and start readily a motor cycle carburetter must have the main air supply considerably restricted, whilst to obtain the maximum speed a large volume of air must be drawn past the jet. Obviously both desiderata cannot be obtained by the use of one combination of jet and choke tube, which explains the reason for the Binks carburetter having two jets and choke tubes—one for slow strong pulling, and one for speed. We reproduce a section of the carburetter from which its internal construction will be apparent. There are two ports in the barrel connecting with the jets, the port first uncovered by opening the piston throttle being connected with the smaller jet. After this has been fully opened by the piston throttle, the port communicating with the larger jet chamber commences to open, and when both are wide open full power is obtained. A further movement of the throttle uncovers a third port, through which auxiliary air may be admitted. All these operations are performed by a single lever and Bowden wire controlled throttle. Six interchangeable jets are supplied with each Binks carburetter, and, further, the area of the choke tubes can be varied until the best results are obtained without the rider dismounting from the machine. It is claimed that with the Binks carburetter every ounce of power can be extracted from the engine, and that, too, without the objectionable disadvantage of the engine refusing to run slowly with what we may call "racing adjustments." The jets are readily get-at-able for cleaning.



A filter is provided between the float chamber and feed pipe. The float needle is of the inverted cone type, and suitable adjustment is provided. The designer of this carburetter is Mr. Charles Binks, who will be remembered by early readers of this journal as being responsible for a low-built four-cylinder motor bicycle about 1904, several years before its time. The makers are Messrs. C. Binks, Ltd., Phœnix Works, Church Street, Eccles, Manchester.

Carbonisation in Practice and Theory.

PERHAPS the worst fault of the modern motor cycle engine is its tendency to carbonise—that is, to accumulate a deposit of charred oil residues, mixed with road filth and metallic particles, on the piston head, closed end of the cylinder, and valves. Such deposits have a deleterious effect on the engine's running in two separate ways:

1. They are inferior conductors of heat, and so interfere with the cooling of the engine *viâ* the gilled flanges on the cylinder casting.

2. They increase the compression ratio, by reducing the area into which each charge of gas is compressed; and therefore as the explosion pressure is increased and greater heat generated, cooling becomes more difficult.

Consequently, although the modern engine compares favourably with the engine of five years ago, in that it should cover 10,000 miles without any serious stoppage, yet it compares unfavourably in that its cylinder has to be dismounted and scraped rather frequently (every 1,000-2,000 miles), which is a long and messy job. The carbonisation trouble is worse to-day than it has ever been, probably because the ultra-efficient engines now current generate increased heat in their working, and this heat solidifies elements in the lubricants which once remained fluid.

How to Reduce Carbonisation.

Until engines free from this defect are evolved, it rests with the rider to minimise the nuisance to the best of his ability. His most valuable opportunities are of a simple character. He must ruthlessly eschew all temptations to economise in the purchase of lubricants. Some of the cheap oils consist largely of a thickening adulterant or "sludge," which is practically destitute of lubricating qualities, and is very susceptible to heat. I have tested cans of oil, of which quite 15% would be deposited on the interior surfaces of the engine in the form of a hard cake almost as soon as it got past the piston rings and into the cylinder head. Quite a moderate heat, such as may be obtained by standing the can on a dull fire for ten minutes, will ofter reveal the presence of this objectionable sludge. The better oils thin evenly under a heat test; the worse separate into a thin watery fluid and sludge. Hence a proved oil at a fair price is essential.

Secondly, the makers' instructions with regard to frequency of lubrication should be followed carefully. Many riders obey the instructions in the ordinary way, but if their engines begin to run weakly, or are confronted by an exceptional hill, they promptly inject three or four pumps of oil, and very probably double the ordinary charges for some time after the hill is climbed. This is about as sensible as trebling a dose of physic because a single dose did good. If a rider suspects his lubrication is faulty, it is the easiest thing in the world to dismount, and use the drain plug as a test of quantity. In aggravated cases, it is worth while whipping off the cylinder in search of the nice green film which should exist between cylinder and piston. But the reckless injection of several extra charges merely clogs the flywheels at the moment, and afterwards results in heavy deposits.

Thirdly, the rider should drain the crank case at regular intervals, after the engine has been standing still long enough to permit the unused residues to drain down into the crank case. If the dregs are very thick, a little paraffin assists the clearance.

Fourthly, it is essential to keep the piston rings in good order, their gaps spaced out accurately, tight up and down in their grooves, a close fit in the cylinder. They are the custodians of the combustion chamber, and in proportion as they are a good fit, the amount of oil which reaches the chamber will be reduced. In the case of old engines, it often pays to fit a scraper ring at the lower end of the piston to mop surplus oil off the cylinder walls as the piston descends. This device can only be attempted if the piston walls are thick, but it is a sound thing, for most of the oil which reaches the chamber is oil left on the cylinder walls when the piston descends, and is scraped up on the compression and exhaust strokes.

Fifthly, any modification of the standard "one charge per twenty miles" helps. It is obvious that on this rough and ready system the engine is over-lubricated for 25% of its working life, and by injecting half or quarter charges at more frequent intervals, or, better still, by employing a drip feed or mechanical lubricator, the periods of over-lubrication are reduced. It is in such periods that the foundations of carbonisation are laid.

Carbonisation and Design.

In the immediate present the most practical point of design is to render the process of dismounting a cylinder and its fittings as swift and simple as possible. Prevention is always better than cure, and a "live" modern industry cannot long remain content with mere makeshifts. The temperature of the combustion chamber, which is the crucial factor in the question, is more likely to be raised than lowered, as design and efficiency advance, and even if we could compel the use of only the best oils, the oil firms cannot produce lubricants which shall be proof against such temperatures. The obvious lines of progress are therefore as follows:

(1.) Regularisation of lubrication by a ruthless scrapping of the "once in a blue moon" pump.—Geared mechanical lubricators are imperfect because they increase the dose in ratio to engine speed, and speed and load do not always keep pace. Some responsibility must be thrown on the driver in all probability. The normal drip or pump feed might be supplemented by a hand-operated by-pass, to be opened only in emergencies, and serving to double the normal feed; such normal feed in any case to be of the drip order. Possibly the by-pass might be coupled to the throttle lever, and open only on full throttle.

(2.) Reduction of temperature.—Probably water-cooling is the only useful expedient here, and it should be reserved as long as possible. It may become inevitable within a year or two.

(3.) Screening of air intakes.—An incredibly large proportion of the deposits is in reality picked up from the road, but naked air intakes remain the rule, because riders cannot be trusted to keep gauzes clean. One might suggest now that the New Hudson people have set the fashion of printing instructions on the tank top, that some up-to-date firm might gold-stamp the words, "Keep your air-

rbonisation in Practice and Theory.—

uze clean, you juggins!" just abaft the petrol ler. It should further be remembered that impurities cked in with the air are mostly abrasive, and ve a more serious bearing than their aid in rbonisation.

(4.) A radical alteration of design, which might rn carbon deposits to the advantage of the engine.— veral uncommon valve designs can probably claim th truth that in their systems a moderate carbon posit is a merit and a help. Many users of the w Daimler engine say that it runs better as it gets tier, within limits. The carbon serves to seal sundry joints, and water-cooling prevents it from assuming sufficient dimensions to upset the compression ratio. Or, again, a return to the loose combustion head would be of distinct advantage if surer methods of obtaining a gastight joint came into vogue. It is a simple matter to whip off a loose head, and the loose head simplifies the cleaning of piston and cylinder. Moreover, such a construction has great manufacturing advantages. It is easier to get the cylinder bore true, it is possible to machine the entire internal dome of the head, and carbon deposits do not adhere so readily to a highly polished surface.

B. H. DAVIES.

THE PROBLEM OF TIMING SPEED EVENTS.

THE competition having closed, the task of judging the replies to the offer of £2 2s. for the best suggestion for timing speed events will cupy some few weeks.

Numerous and varied are the ideas which have en submitted. There are three suggestions from ders to fire a gun as the competitor crosses the rting line. Two of these have apparently overked the fact that considerable discrepancies would cur in this way, as the timekeeper who would be tioned at the finish would not hear the report of gun fired at the starting point till a second or afterwards. The third reader has, however, lised that sound takes time to travel, and has gone far as to calculate the time it would take for the nd of a gun shot to travel from one end of a mile rse to the other. One original suggestion from a der is to adopt the metronome—an instrument familiar to music pupils used for beating a certain regular time—his idea being to start it by electrical means as the competitor crosses the starting line. Still another suggestion is for the timekeeper to ascend in a balloon, station himself midway between the starting and finishing points, and so have a birdseye view of the proceedings.

But quite the most ambitious idea is to expose a cinematograph film as a rider starts and finishes, a watch in motion being shown prominently on the film so that the results calculator could note at his leisure the exact moment the competitor crossed the starting and finishing lines. Thus there would always be a record of the performance, and this suggestion, if practicable, would put an end to grumbles as to accurate timing.

The majority of the replies, however, favour electrical timing.

A PIONEER MOTOR CYCLIST.

THE accompanying illustration depicts Mr. Edmund Sharpe, of Lancaster, and his 7-8 h.p. Bat-Jap motor cycle. Mr. Sharpe is sixty rs of age and a firm believer in a powerful twin nder machine. He has had a number of motor les, and has been a supporter of the power-proled machine from the earliest days. His first unt was a 1¼ h.p. Minerva, and since then he had a 2 and a 2¾ h.p. Ultimately he migrated a single-cylinder 3½ h.p. Bat, of which he has one or two, then on to a 6-7 and 7-8 h.p. of same type. He has had about eight Bats altoher, and has just taken delivery of the new twin which he is portrayed.

Ir. Sharpe takes a keen interest in the pastime, competed in the Shap Fell hill-climb. It was son who tied with Capt. Gregson for fastest speed the open race, and again in the Westmorland C.C. members' hill-climb.

There is nothing on the market like the Bat spring ne for racing or touring in Mr. Sharpe's opinion. especially touring for a man no longer young. shoots, fishes, and until a few years ago hunted ularly. A keen sportsman in his youth, Mr. rpe is a supporter of all forms of sport to-day, is chairman of the Fishing Board at Lancaster. is a car owner, but, to use his own words, "I stick to motor cycles so long as they will stick me."

All his sons ride Bats, and he is just obtaining a Scott open frame machine for his daughter. Mr. Sharpe attributes the good health and strength he enjoys to the invigorating pastime of motor cycling.

Mr. Edmund Sharpe, of Lancaster, a pioneer motor cyclist, now sixty years of age, mounted on his new twin Bat-Jap.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Auxiliary Petrol Supply.

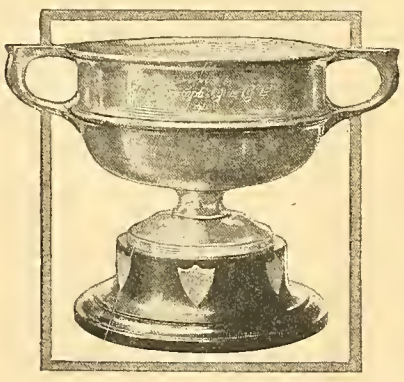
Would there be any danger in carrying a spare petrol tin of suitable dimensions across (and below) the footboards of my Douglas machine? The tin would be close behind the front exhaust box, which is placed below the footboard. —C.R.W.

If the tin were of substantial construction, and did not leak, there would be no harm.

Dog Owner and Damages.

I had just left home one morning recently when on turning a bend, over a bridge, about twenty yards in front of me, in the middle of the road, was a large collie dog. I switched off, and the dog ran on the footpath, but when I was about four yards from him he ran back again, and brought me over, running into my front wheel and doing damage to the extent of about £5. The dog had not got a collar on, and was not under control. The owner says that he is not going to do anything for me, and that I shall have to sue him for any damages I claim. Would it be worth my while to do this?—D.B.

Our legal adviser states: "I should not like to recommend 'D.B.' to sue for the damages, unless he is prepared to run the risk of losing the action. The law is not quite so clear as one would wish, and unless he can show that the owner knew of the mischievous propensities of the dog, it is very unlikely that he would succeed in any action he might bring."



A very handsome silver rose bowl presented to the Northern League of Motor Cyclists by the Triumph Cycle Co., Ltd., for annual competition.

Oil Leakage. Lessening Vibration.

Kindly answer the following questions: (1.) What is the best way to prevent oil leaking out of the crank case? (2.) Does oil ruin a rubber belt if it goes on it? (3.) How would you clean leather and rubber belts when oily? (4.) Can the vibration on the handle-bars of a motor cycle without spring forks be lessened in any way?—J.A.T.

(1.) You might try a washer of brown paper soaked in boiled linseed oil. However, if the surfaces are clean and absolutely true there should be no leakage. (2.) Yes, oil will certainly ruin a rubber belt if you get much on it. (3.) Clean belt either with a rag soaked in petrol or scrape it with a blunt knife. (4.) Only by fitting long rubber handle-bar grips, such as those sold by Messrs. Brown Bros., Ltd., 15, Newman Street, Oxford Street, W.

Lubrication of Timing Gear.

In November last I purchased a 3½ h.p. 1910 Rex second-hand, and have ridden about 1,000 miles. The engine has given very little trouble and runs well, but am troubled in lubrication matters. At first I gave one pumpful of oil in about ten miles but found this too little, and have lately been giving one pumpful in eight miles. I have never had a sooted plug, and engine runs cool and well, but valve tappets (or plungers) get dry in their sleeves, especially that of the exhaust valve, and unless oiled every time I go out at the top with ordinary oiler they start grinding the sleeves; there is never a sign of oil working up out of timing gear case. The timing gear itself seems to have a fair amount of oil, but no amount stands in this case. There are three holes through from the crank case about $\frac{1}{16}$in diameter each, while air release is through hole in crankshaft on pulley side. Would you advise drilling extra holes in the case about same diameter, say, two near top opposite tappets, and one at the bottom to allow surplus oil to run back to crank case, or enlarge existing three holes a little only?—J.H.W.

We should advise you to drill extra holes in crank case about the same diameter. This would be better than enlarging the present holes. You might also examine the bush of the main bearing and see if the oil groove is clear.

Steel Studded Tyres.

Would you tell me the advantages and disadvantages of steel studded tyre for the driving wheel of a motor cycle? Do the steel studs affect the s and get hot?—H.C.L.

A steel studded tyre is slightly resilient than an ordinary tyre, but practically unpuncturable, the only advantage being that it is likely, if machine is used as a single, to skid stone sets and wood paving. If a sid is fitted, this objection does not good. A steel studded tyre is slig slower than a plain rubber tyre.

Removing Carbon Brush from Magneto.

(1.) I have a 1908 3½ Brown, and in removing ca brush, which was cracked dropped part into magneto. this cause trouble, and wha best way to extract it? (2.) A getting under way the machine not take any extra air even on throttle, and sometimes it mis badly and engine gets very hot. can I remedy this?—CARBON.

(1.) It will be better to remove broken carbon. This is easily done removing the end plate of the magn You cannot do any harm as long as do not remove the armature from tween the magnets. (2.) The symp you describe is probably due to a pa obstruction in the jet or supply pipe.

W. A. Lockwood, secretary of the Huddersfie and District Auto Cycle Club, and his Bat-Jap

Starting Difficulty.

I have just had a magneto fitted to a 1907 5 h.p. Rex, and have great trouble in getting it to start, whereas the machine used to start fairly easily with ccumulator. Please let me know hat you think I can do to remedy his.—C.F.V.

cleaning the contact breaker, seeing the points are clean and smooth, setting the points of the sparking as close together as possible without hing. Advance the spark to almost fullest extent and reduce the main pening of the carburetter.

Valve Tappet Clearance.

Will you kindly tell me if there is loss of efficiency in my 3½ h.p. engine owing to the bottom end of exhaust valve stem being about 1-16th of an ch clear above the tappet head when e engine is at rest? I notice under nilar circumstances that the inlet lve stem sits close down. Does it ean the exhaust valve spring requires newal? Also, how often should I rape off carbon deposit?—LS 171.

can easily test if there is any loss power through the excessive amount clearance between the bottom of the e and the tappet. Insert a strip of il between the two while the engine orking, and if the engine appears to up speed you will know at once that alteration is necessary. The gap be- n the two should not be more than thickness of a visiting card. The ust springs should not require re- ing. You should scrape the carbon sit off whenever it is needed. You soon get to know how often, *e.g.*, n the engine begins to overheat, pre- e, and to lose power.

Misfiring.

My engine, a Fafnir, has lately taken to chronic misfiring. The symptoms are these: the machine starts off all right, but as soon as the speed rises above ne miles an hour the misfiring com- ences, but sometimes I can reach enty miles an hour in a series of lutters, but even when the speed is irly good the missing of the engine n be detected; the hill-climbing pacity is greatly reduced, and the trol consumption is very heavy. he carburetter is a Fafnir; I have eaned it out thoroughly, and have ied giving all possible air until the gine refuses to fire. The spark is ite all right, contact points flat and ean; plain coil. The explosions when isfiring sets in are heavy and pound- g. I would be very much obliged you if you can suggest a remedy. -W.P.

should advise you first of all to turn r attention to the adjustment of the inum points on the contact breaker. points should be clean and a firm light contact should be made. Is a n or trembler coil used? It seems y likely, however, that the trouble is to the carburetter. Possibly it would mproved by fitting a slightly smaller ke tube.

Reducing Compression Ratio.

I own a 1909 Triumph, and am thinking of lowering the compression. (1.) Do you consider that a lower compression would improve this particular engine for general touring purposes and make it a better hill-climber? (2.) Would the best method be to fit a plate under cylinder and obtain valves or tappets with longer stems? (3.) What thickness of plate do you recommend, and which is best to obtain, longer tappets or valves? (4.) What alterations should be made to carburetter, if any? (5.) Would good compression be likely to remain longer after the alteration? At present compression vanishes about every 700 to 1,000 miles; to restore same engine has to be thoroughly cleaned and perhaps rings renewed.—F.C.

(1.) A lower compression ratio would probably improve the running of your machine by minimising the tendency to knocking. The general efficiency, however, would be reduced. (2.) As suggested, the best method is to fit a plate underneath the cylinder and obtain valves with longer stems. It would be simpler to obtain different design valve caps to give a greater com' ustion space. (3.) The thickness of the pl tes should be approximately three millimetres, but the correct size can only be found by experiment. (4.) No alterations should be necessary to the carburetter. (5.) You should certainly have no difficulty in retaining compression with a cool running engine.

Seized Engine Pulley.

While proceeding down hill with my sidecar combination the engine slowed down and finally came to a standstill, and when I tried to start again I found the pulley would not turn, allowing the belt to slip. After some time I inserted my spanner between the crank case and pulley and forced outwardly, which freed the pulley at once, and I was able to start. The same thing happened two months ago. Could you tell me the cause and remedy?—D.H.

The only reason we can think of to account for the trouble is that the inner pulley flange may have become loose on the shaft and worked its way up to the face of the crank case boss, thus setting up friction, and finally getting so close that it jammed temporarily. We would suggest that you remove the inner flange, and you will be able to detect if there has been any rubbing between the back of the flange and face of the boss.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"W.P.K." (Borris). B. and B. or Amac carburetter on a late pattern four-cylinder F.N.

"E.J.H." (Cinderford). The Scott two-stroke machine used with a sidecar.

"J.B.S." (Crewe). The Bedelia, particularly with regard to belt transmission in wet weather, and utilisation of belt slip in place of a differential gear.

"Regular Reader" (Dublin). The Lomax belt. Probable life in miles.

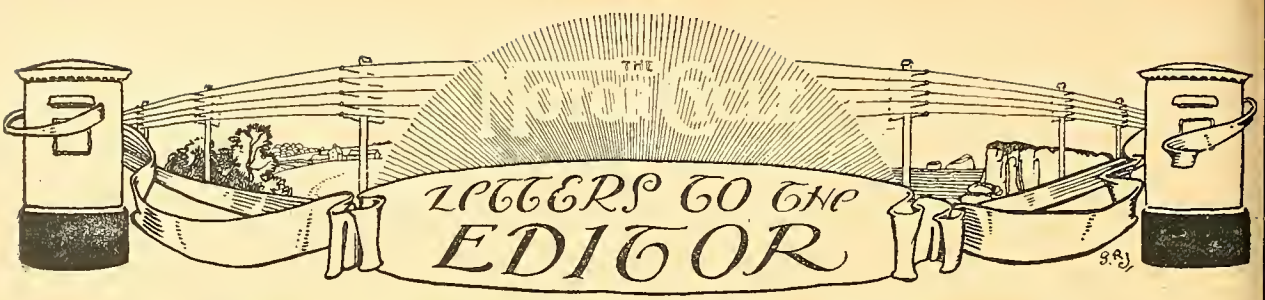
"C.N." (Handsworth Common). Millennium and Mabon change-speed gears fitted to 1908 Triumph.

"A.C." (Dublin). 3½ h.p. Ariel with variably-geared pulley used with a sidecar.

"C.J.D." (Lavender Hill). N.S.U. two-speed engine shaft gear fitted to 1908 Triumph.

WHERE SEA AND SKY AND MOUNTAINS MEET.

A meeting of the Cape Peninsula Motor Cycle Club, the members of which make regular trips at week-ends.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

A Remarkable Occurrence.

[5591.]—Last week, while riding near Norwich, a partridge flew out of the hedgerow in a straight line slightly ahead of me. I opened the throttle, and rapidly caught up to it, and when level with it I caught the bird with my left hand and held it for quite thirty yards, but had to release it. I found I could not lift the exhaust lifter with the bird fluttering in my hand, as I was approaching a nasty corner. I have been riding motor cycles over eight years, but have never seen or heard of such an occurrence before. E. CROSS.

The Deposit System.

[5592.]—As I have recently been victimised by a firm of dealers advertising in this journal, I am writing these few lines in order to warn others who may be contemplating a deal for cash, exchange or both.

I would urge upon all readers the advisability of doing business through the deposit system of *The Motor Cycle*.

Certain goods sent to me were not as represented, and it was only after my solicitor had threatened legal proceedings that a settlement was arrived at, costing me £3 for nothing but experience, which, I think, was dearly bought.

D 983.

Clutches and Variable Speed Gears.

[5593.]—Encouraged by Mr. Frasetti's statement made some time ago in your pages that a modern clutch was an efficient substitute for a variable gear I invested in a free-engined chain-driven 1911 mount, and must confess that my experiences have been the exact opposite of his.

I have now done about 600 miles, during which the clutch has required adjusting three times, to prevent it slipping uphill on a 4½ to 1 gear. If it is adjusted so that it does not slip permanently, it is practically useless for obtaining a restart uphill with this gear on gradients worse than 1 in 20, and under no circumstances have I been able to use it as a substitute for a variable gear.

His picture of slipping the clutch as an aid to climbing single figure gradients is entirely delusive as applied to this clutch. If it is adjusted so as to be of any conceivable help in this way, it will slip of its own accord long before such severe grades are approached, and will bring the machine to a stop. CHAIN DRIVE.

Change Speed Gears.

[5594.]—Mr. W. Davies raises an interesting point in his letter [No. 5563] published on April 27th. There is undoubtedly a great and increasing demand for really good change-speed gears on motor cycles, which Mr. R. Buch's experimental worm-driven three-speed gear may meet in time.

I would, however, remind him that there is already an excellent three-speed gear on the market, in the shape of the Armstrong Triplex plate clutch and gear, which has long since passed the experimental stage, and has been severely tried and proved most successful in open competitions.

A sign of the times is that the New Hudson Cycle Co., who are up to the present the principal users, are entirely dropping their single-speed models in favour of the three-speed and free engine clutch type.

Much of the trouble experienced in keeping lightweight machines up to concert pitch is due to the microscopic engines used in some cases, which are submitted to a chronic overloading they are totally unfitted to withstand. Hence rapid loss of tune, which spells disaster and pushing up hills.

GEORGE BELL.

Scrap Steel on the Highway.

[5595.]—We enclose you a letter addressed to a firm we do business with in scrap steel.

We think in view of the number of punctures which are constantly happening from this kind of traffic on our public highways, particularly in manufacturing districts, that the matter should be taken up seriously. We feel sure you will agree with us. Per THE M.P. CO.

Birmingham. CHAS. G. HOPKINS.

[COPY.]

April 14th, 1911.

To Messrs. ———

Gentlemen,—With reference to collection of scrap steel, in future cases we should be glad if you would send a vehicle which would be likely to carry this along the road without losing it on the way, as it must be obvious the class of vehicle you send here is likely to cause endless difficulty with either cycles or motors.

We take this opportunity of saying quite definitely if a man calls again with a flat lorry we shall decline to let him have the steel, as it is only fair to the ordinary user of rubber tyres that this should be so.

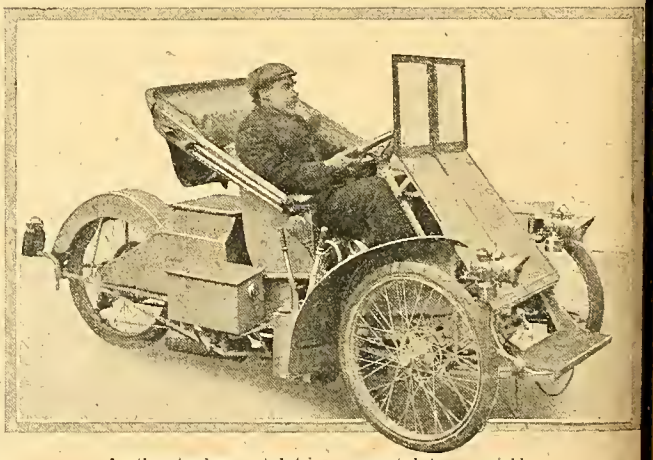
Respectfully yours,

Per THE M.P. Co.

Converted Tricars.

[5596.]—It may interest your readers to know how we converted a 9 h.p. Riley tricar into a sociable. We are sending a photograph of it. We first of all dismantled the body, and then we cut the steering away bodily and moved it to the front cross-member. We next fitted a couple of bucket seats from a car as shown, and finding the change speed and brake levers were too far back, we unbolted them and slid them along to the desired position. A new back mudguard (hinged in the middle for getting at tyre when necessary) was then made and fitted, also side splash pieces to front guards. We added a sloping folding dash and wind screen, Cape hood, etc., making the whole a compact and sociable three-wheeler. OAKLEIGH MOTOR CO.

A. DURANT, Manager.



Another tandem-seated tricar converted to a sociable.

The Lady Motor Cyclist.

[5597.]—As a rider of the ladies' Motosacoche, I have followed the recent discussion in your columns with the keenest interest, and I am bound to say that nothing has yet been put before me to slacken my affection for this lightweight machine—properly so-called.

I fail to see that the lightweight can connote anything but both light weight—avoirdupois—and low power. Does not Mr. Evershed know that a big engine will smash up a light bicycle, and that the bigger the engine the harder it is to start irrespective of its weight.

As to Miss Berend's experiences I would like to know what *is* the weight of her machine—nearer 200 than 100 lbs., I'll be bound. And Miss Berend should remember there are some of us who do not want to ride through the country like a flash of lightning. Personally, I prefer a speed at which I can see the countryside. If the motor cycle is ever to become popular with our sex it *must* be of a weight that can be handled. You cannot get away from it that 100 lbs. is a negotiable one-woman power weight—over that is beyond her. As for hill-climbing, I have done the Reigate Hill. What more would you?

The ladies' Motosacoche is so much like the ordinary lady's bicycle that if more ladies rode it much of the prejudice against motor cycling for women would disappear. And there is such a prejudice, strongly marked. Everyone to whom I have spoken of the joys of motor cycling is frankly amazed at my temerity in climbing, as they imagine, one of these high-powered heavyweight machines they see along the roads. (Miss) E. L. C. WATSON.

A Pillion or Tandem Seat.

[5598.]—I was interested in the article and illustrations on page 418 of your issue of April 27th, describing a home-made tandem seat, as I have carried a lady passenger some miles in this manner, and my method of getting over the starting difficulty without a clutch or two-speed gear may be of interest. The passenger sits facing the left as in your illustration, and I make the ordinary running start from the right side; when the engine fires I mount the pedal with the right foot and sit side-saddle on the machine, and then at my leisure and when the machine is well under way I lift the left leg over the top tube and get into the ordinary riding position, "all without the aid of a net." It is quite easy after one or two tries without the passenger. On long journeys it is restful to ride side-saddle occasionally, preferably with the feet over the left side, as then the brake pedal is within easy reach.

The Mersey Motor Club had arranged its first members' hill-climb at Rivington Pike on the 7th inst., and in view of your comments in recent issues on the overwhelming advantage a small engine and heavyweight have under the A.C.U. formula, many readers may be interested to know that we took the step of not allowing machines which are eligible for the lightweight class to compete in the 600 c.c. class. The committee thought that this would induce many riders of 3½ h.p. singles to turn out to what would otherwise have been a hopeless task. V. S. HORSMAN.

Hill-climbing.

[5599.]—In view of the present keen competition amongst motor cyclists to find hills that apparently cannot be conquered, for failures to climb out of the way gradients seem few and far between. I am bringing to the notice of your readers the existence of an admirable test of this nature in my neighbourhood, and I may preface my brief description of the hill itself by offering hospitality, and myself as a guide and much interested spectator, to any motor cyclists who may care to come this way. For their information I live midway between Hereford and Ledbury, and the hill in question is about five miles from my house. The total rise is some 1½ miles; it is practically unfrequented, the surface is excellent, and the gradient of the final pitch is 1 in 3½ for 250 yards. The remainder of the hill is not too terrifying in the light of what I have read of recent climbs, but I can confidently assert that it will take a good driver, to say nothing of the machine, to accomplish a "clean" ascent of my particular hill. In conclusion, I must add that I drive both a car and motor cycle myself.

Tarrington. (Dr.) Rev. C. HOME.

[5600.]—In reply to letter No. 5561, I regret not having been a privileged spectator on the occasion when Mr. Percy made a clean ascent on his 1910 Triumph geared 5-1.

May I quote Mr. Percy's own words from letter No. 5030, October 6th, 1910? "On Sunday, September 18th, between 6 and 7 p.m., I climbed Stentiford's Hill, Torquay, first attempt, easy pedalling for a few yards; second attempt without pedalling, gear 5⅜ to 1. . . . My weight is 10 st. 3 lbs."

If Mr. Hardy's memory for fractions has proved itself so elusive in regard to the climbing of Stentiford's by Mr. Percy, what guarantee is there that it has not proved itself similarly elusive in regard to his own climb on the T.T. Bradbury. May not Mr. Percy's gear have been 5⅜-1? May not Mr. Hardy's own gear have been a similar one? Again, even if Mr. Hardy has correctly estimated his gear at 4⅞-1, his machine is a T.T. model, and has, I presume, the ample engine dimensions lately attributed to that make of machine (89 × 89), and, therefore, ought to climb the hill or go on the scrap heap. Mr. Helm's mount was a heavy touring machine, in full kit, and I weigh well over 11 st.

I will admit that the surrounding neighbourhood of Stentiford is not artistocratic, but what has that to do with its being a main road hill? Mr. Hardy says that the hill leads nowhere in particular. I can only say that either his memory proved as faulty here as it did in the case of Mr. Percy's gear, or that he climbed the hill so fast that he was unable to see where it led to! I am aware that the hill was climbed some time ago by Mr. Harding on a 7-9 V.S., geared 4½-1; also by Mr. Myott on a 5 h.p. Indian, geared 5.2-1. I have, however, witnessed dozens of unsuccessful attempts by powerful singles and big twins—machines that would make light of such hills as Holne Chase and Dartmeet on a similar gear.

For myself, I can only say that I have ridden all over England and negotiated most of the hills usually regarded as

Reliability trial of the Motor Cycle Union of Ireland (Ulster centre). Competitors at the starting point, Fort William, Shore Road, last Saturday.

worthy of notice, and have never met one which for sheer gradient could compare with Stentiford's. It would give me great pleasure on a future occasion to witness one of Mr. Hardy's lightning ascents, also to meet him at the summit and introduce him to the main road, which would be the natural outcome of his attempts—if successful. Gear to be measured —at 4⅞-1. H. HORTON (Rev.).

Low Registration Numbers.

[5601.]—Why do not those motor cyclists who are anxious to get low numbers apply for a "back number" in one of the Home Counties, *e.g.*, Surrey or Middlesex? These counties have a single letter, and if one gets a three-figure number, as I did last month for my 1911 mount, it is equal to a two-figure one in an Irish county, as, I believe, all the latter have double identification letters. Apart from the question of low numbers, I prefer to register with a local authority, as I do not see the good of subscribing to the upkeep of roads in some remote Irish county which in all probability I should never visit. P 102.

A.C.U. Test Hills.

[5602.]—We note with considerable satisfaction that the notorious Stoupe Brow has been discarded as a test hill in A.C.U. six days' trials course.

We certainly think that our New Hudson three-speed machine will climb any hill that any ordinary individual would dream of tackling. However, when it comes to a tortuous and boulder strewn track up a cliff, we think the line should be drawn, when it comes to sending possibly eighty or a hundred machines over it in close order.

With reference to Dr. C. S. Patterson's letter, we would refer him to "Ixion's" remarks, from the fact that it is easier to climb the hill at thirty miles an hour than at twenty for a 3½ h.p. machine. In the same way it should be quite an easy matter for an efficient 2¾ h.p. machine to climb a hill at eighteen or twenty miles an hour. After all, the deciding test of a machine is its abilities to perform the task required of it.

You will notice that both the New Hudson 2½ h.p. single-cylinder three-speed machines gained first-class certificates in spite of their small cylinder capacities and possibly greater weight. *Verb. sap.* We have no doubt as to their ability to climb Sutton Bank at twenty miles an hour if required.

Possibly their small cylinder capacity and medium weight of 130 lbs. or so is one of the reasons why they are almost invincible on the A.C.U. formula.

THE NEW HUDSON CYCLE CO., LTD.

Carbon Deposits.

[5603.]—After reading various letters in your columns on the nature and quantity of carbon deposits in motor cycle engines, I decided to run my 3½ h.p. single 1,000 miles by cyclometer, with and without a gauze over the air inlet to the carburetter.

The carburetter I used for the experiments has two thicknesses of gauze over the air inlet. But the gauzes do not seem to throttle the air supply to any noticeable extent. These gauzes were removed for the first experiment.

Experiment I., without gauze:

Deposit on piston only = 2.95 grms.
Approximate volume = 1.9 c.c.
Specific density = 1.55.

A gritty deposit distributed in irregular masses over the top of the piston.

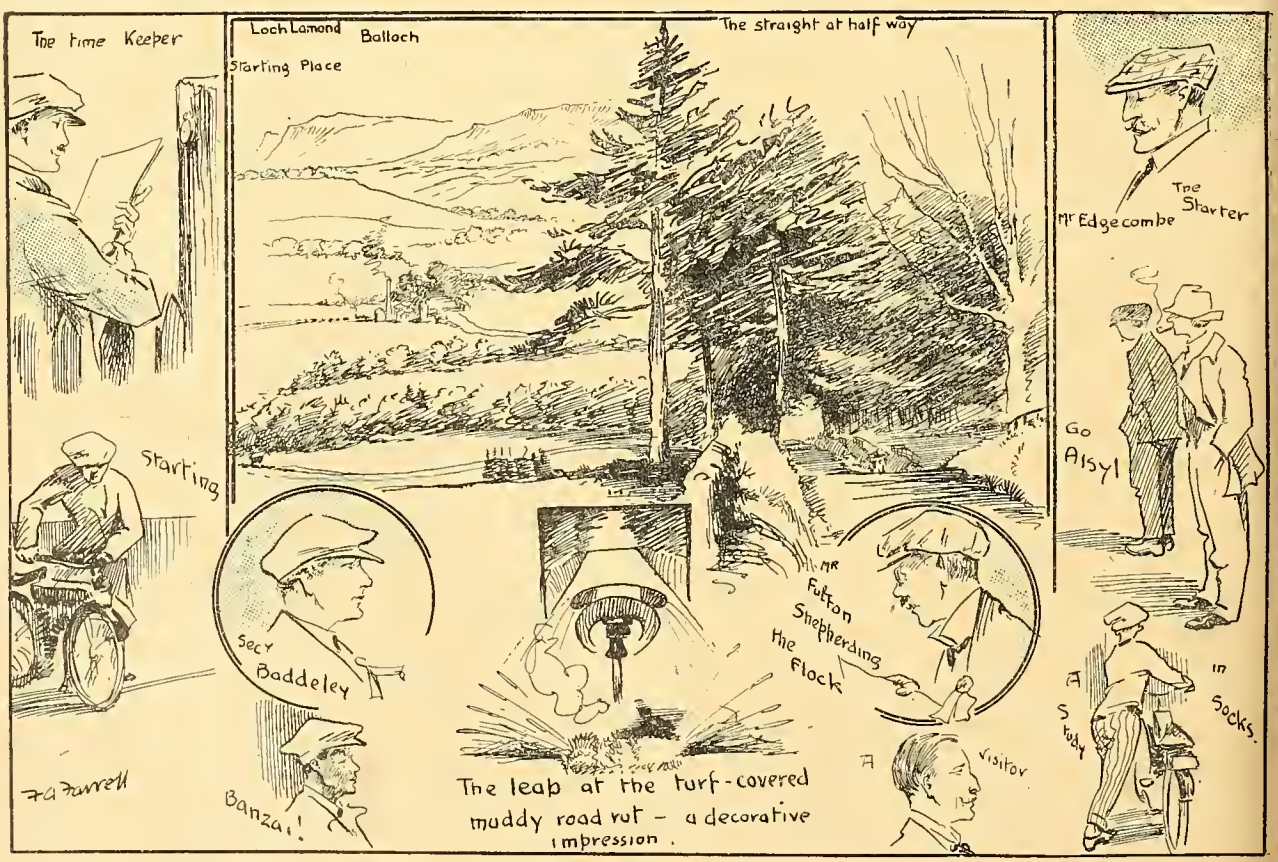
Experiment II., with gauzes:

Deposit on piston = 1.70 grms.
Approximate volume = 1.2 c.c.
Specific density = 1.41.

A smooth deposit distributed more or less evenly over the top surface of the piston.

The difference in densities is due no doubt to the absence of the larger particles of road grit in the latter experiment. I think from the above results the desirability of using a gauze protection for the carburetter is evident.

W. W. BROWN.



SCENES AT THE GLASGOW M.C.C. OPEN HILL CLIMB LAST SATURDAY. (See page 481).

Over 400 Miles per Day for Six Days.

A Wonderful Exhibition of Stamina by Albert E. Catt.

A MARVELLOUS achievement! Thus we sum up Albert E. Catt's new six days' record accomplished last week, during which period he covered a distance of no less than 2,557 miles—675 miles more than his vious best. It is without doubt the most convincing imony of the reliability of the modern motor cycle yet orded. This big distance has not been accomplished by

. E. Catt outside the Newcastle and District M.C. premises. He is discussing the question of petrol, prior to the restart.

ng at excessive speeds, but mainly by the rider's rkable exhibition of pluck and endurance in remaining e saddle long hours every day. For instance, on the day Catt started half an hour after midnight, and did ut his trusty Triumph to rest in Edinburgh until twenty- and a quarter hours later, having meanwhile covered the C. London-Edinburgh gold medal route, besides the from Northampton to London—altogether 461 miles. ite the huge distance traversed, Catt was not by any s lucky so far as freedom from trouble was concerned. 5½ h.p. free engine Triumph ran faultlessly from start to , except for a valve stretching, but only thirty-three had been covered when a puncture was experienced, nor Catt escape from the clutches of the puncture fiend hat day. On arrival at the Newcastle and District r Club's premises, where he had been invited to tea. tyres were flat, and while he obtained refreshment the bers kindly effected repairs. At the 415th mile the ust valve lengthened, making it necessary to use a but from that point onwards no engine trouble whatever experienced, nor were the valves changed. It should be interposed that *The Motor Cycle* had sealed the der to the frame before the start, and the seals were d to be intact at the conclusion of the ride.

esday morning Catt left Edinburgh at 3.20 after less four hours rest, and this day he covered 412 miles, ately finishing at Barnet after a most gruelling ride. day was probably the most adventurous of the six. started badly, suffering a badly burst tyre at 4 a.m.

A Race with a Train.

ar Dunbar the road runs parallel with the railway for al miles. It was 5 a.m., when a luggage train hove in , and as both the driver and Catt were losing no time pirit of emulation seized both, and an exciting duel ved, the driver of the train urging Catt onward.

er in the morning it commenced to rain, and altogether rode for 300 miles this day under the most discomfort- onditions. The rain played havoc with the rubber belt, broke on three occasions. At 10 p.m., nearing Hat- he experienced an extraordinary adventure; whilst ing along the belt flew off, and turning his machine Catt was dismayed to find the belt had disappeared the road altogether.

It took ten minutes before his search in the dark was rewarded, the belt eventually being discovered in the long grass by the roadside. But Catt was now beginning to feel the effects of the long hours, and was in a comatose condition. Instead of turning his machine round again for Barnet, where D. K. Hall was waiting to check him, he commenced to retrace his wheel marks, and had gone some distance before he realised his error. Overnight the tyres were changed.

Wednesday's run was to the West. It was a bitterly cold morning, and at Bagshot he dismounted and ran alongside to restore circulation. On and on Catt rode, wondering whether he was not attempting the impossible, until, nearing Exeter, he had practically decided to give up, his poor head reeling. He dismounted for some minutes, picking primroses to pass the time away. Again British pluck spurred him on to complete his self-imposed task.

At Yeovil Catt was hailed by a motor cyclist, who proved to be a record aspirant himself, presumably disappointed at Catt's attempt to improve upon his original six days' ride. He journeyed home at night, arriving wet through to the skin, after covering 428 miles.

Thursday's route was to Holyhead and back. At Shrewsbury he felt thoroughly exhausted, and again thought twice before continuing. At Menai Bridge an Enfield rider met Catt and accompanied him across Anglesey to Holyhead at a lively bat.

It had been arranged that on the return run Barratt, a Northampton rider of a Zenith, should meet Catt and repair any punctures should it become necessary. Barratt, true to his promise, rode out one hundred miles, but the amusing part is that Barratt's machine was the one that punctured, and Catt eventually had to effect the repair! 407 miles were covered that day.

On the run to Southampton on Friday Catt was welcomed thirty miles from that town by members of the local club, with whom he lunched. Outside Blandford there is a steep hill, and it so happened that a tremendous flock of sheep impeded his progress; the drovers informed Catt that there were 1,000, and it was here that Catt benefited by his choice of a clutch machine, for by judiciously slipping it he climbed the hill without a dismount. Tea at Towcester, supper with Frank Hulbert at the King's Head Hotel, Coventry, and a final jaunt to Northampton, brought Friday's total to 423 miles, and he was now well in front of record.

The Last Day's Run.

For the final effort a start was made at 4.12 a.m. The first breakfast was arranged at Highgate, where he arrived at 7 a.m., returning to Northampton for a second breakfast. On this day especially Catt's vitality was at its lowest ebb, and the tremendous strain was having its effects. In a semi-dazed condition he continued to Attleborough (Nor-

The crowd at Northampton last Saturday to see A. E. Catt finish his wonderful six days' ride on a Triumph. Catt may be recognised between the two lights.

Over 400 Miles per Day for Six Days.—

folk), where after dinner he decided to return to Northampton and so avoid several miles of narrow roads and greasy tramlines to Yarmouth, his pre-arranged stopping point. At Attleborough Catt found a telegram awaiting him from the Mayor of Northampton asking him to finish at 10 p.m.

Prompt to the minute Catt rode up to the Thomas-à-Becket Well, a historical spot where the Mayor and members of the Corporation were waiting to welcome him. Catt had a most enthusiastic reception, his record attempt being the talk of the town. Naturally, there was a large concourse to witness his arrival. Saturday's mileage was 426, making a grand total of 2,557. Catt told us that £1,000 would not tempt him to continue for another day.

Checking.

At the extreme points, viz., Edinburgh, Exeter, Southampton, and Holyhead, it was arranged that a motor cyclist should meet Catt and pilot him to the hotel. He wore a white band on his left arm so that strangers could recognise him. A number of telegrams and postcards signed by witnesses were addressed to *The Motor Cycle* recording Catt's progress. The timetable is crowded out of this issue.

1,000 MILES WITHOUT OPENING THE TOOLBAG.

A motor cycle long-distance trial run on the lines of the R.A.C. Trials for cars will be made by Messrs. Phelon and Moore, beginning on May 22nd, and lasting for six days. Mr. W. Pratt, the well-known P. and M. exponent, will endeavour to cover 150 miles a day without opening the toolbag of his machine, which will be a two-speed chain-driven P. and M. shod with Kempshall tyres. Each day's journey will start from Uxbridge, while the rider and machine will be under the observation of a qualified observer the whole time, who will travel on a car immediately behind. The petrol consumption will be noted, and the vital parts sealed by the Auto Cycle Union. It will also be placed under lock and key at the end of every day's run.

The following routes have been selected for the above trial:

1st Day.—Uxbridge, Rickmansworth, St. Albans, Hertford, Ware, Newport, Cambridge, Huntingdon, Royston, Baldock, Stevenage, Hatfield, Uxbridge, 138 miles.

2nd Day.—Uxbridge, Watford, Tring, Aylesbury, Bicester, Banbury, Leamington, Warwick, Stratford, Woodstock, Oxford, and by the main road to Uxbridge, 172 miles.

3rd Day.—Uxbridge *via* High Wycombe to Woodstock, Chipping Norton, Moreton-in-the-Marsh, Broadway, Evesham, Worcester, Tewkesbury, Cheltenham, Witney, Oxford, Uxbridge, 190 miles.

4th Day.—Uxbridge, Oxford, Northleach, Gloucester, Birdlip Hill, Cirencester, Fairford, Faringdon, Wallingford, Warborough, Thame, Kop Hill, Princes Risborough, Uxbridge, 187 miles.

5th Day.—Uxbridge, Rickmansworth, St. Albans, Dunstable, Coventry, Kenilworth, Warwick, Banbury, Bicester, Berkhamstead, Amersham, Uxbridge, 195 miles.

6th Day.—Uxbridge, High Wycombe, Wheatley, Islip, Banbury, Bicester, Aylesbury, Berkhamstead, Amersham, Uxbridge, Pall Mall, Royal Automobile Club, 140 miles.

Total distance, 1,022 miles.

B.M.C.R.C. THIRD MEMBERS' MEETING.

The programme of the third members' meeting of the British Motor Cycle Racing Club, to be held on Wednesday, May 17th, at Brooklands, is as follows:

3 p.m. The First Eliminating Handicap, for motor cycles of any type, and fitted with any size engine. Entry fee, 2s. 6d.

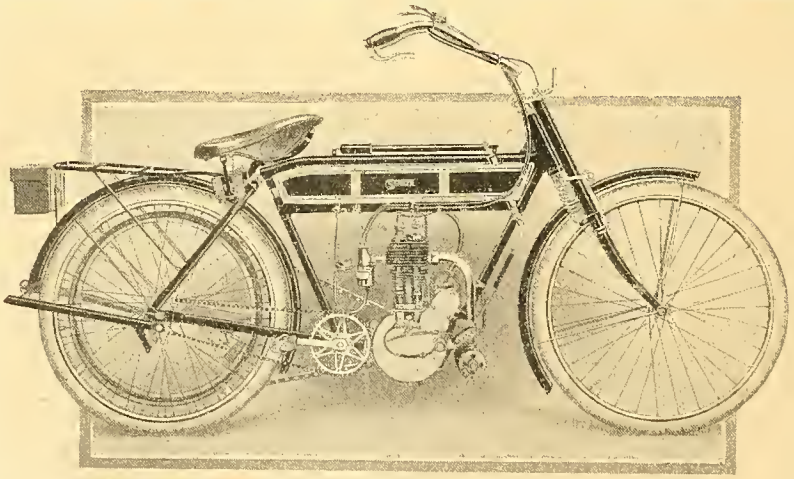
4.30 p.m. The First 1911 Time Trials for one kilometre, one mile, and five miles. The classes are: Class A, for engines not exceeding 275 c.c.; Class B, 350 c.c.; Class C, 500 c.c.; Class D, 750 c.c.; and Class E, 1,000 c.c. Entrance fee, 1s. each class.

5.30 p.m. The Three-lap Scratch Race, for motor cycles of any type fitted with engines not exceeding 500 c.c. The first prize (a silver cup) will be presented by the Palmer Tyre, Ltd. Entry fee, 2s. 6d.

Entries for the above events close to-day (Thursday). Late entries, at double fees, Monday, May 15th. The secretary is Mr. T. W. Loughborough, Highcliffe, Shooters Hill, Kent.

A NEW 2½ h.p. SINGER.

IT has been known to us for some weeks that the Singer Co., Ltd., of Coventry, were busy evolving a medium weight single-cylinder machine to come within the 300 cubic centimetres capacity limit, and the machine made a creditable *début* in the Herts County A.C. Kop Hill-climb last Saturday. It will be observed from the illustration that it is a miniature replica of the 3½ h.p. Singer which has already won its spurs. The cylinder dimensions are 65 by 80 mm., and side-by-side mechanically-operated valves are used, whilst there is a push-down silencer cut-out.



A new model. The 2½ h.p. Singer which secured first place among the single cylinder lightweights at Kop Hill last Saturday.

The Bosch magneto is situated high up in front of the cylinder, and is driven by a train of gears. The carburetter is the well-tried B. and B., controlled by the Singer patent ratchet levers. Other details of the specification include Druid spring forks, and Lyso ¾in. rubber belt. The adjustable pulley gives ratios of 5 down to to 1.

Such up-to-date items as luggage carrier, kick-up stand, and rubber covered footrest (adjustable) are, of course, embodied in the construction of this taking little mount, whilst up turned handle-bar render the rider's position a very natural one. To enable a low seat the top tube is slightly dropped at its rearmost end. Two brakes of the usual type are supplied; the tyres are of 1¾in section. Altogether the little Singer is a handsome looking machine, and, being constructed on standard lines, should command a ready sale.

The Herts. County Open Hill-climb.

Another Record Entry. Results on Formula and Time in both Divisions.

NO more perfect day for a motor cycle competition could be imagined than Saturday last. Hardly a leaf stirred, the sun shone brightly, and the air was as balmy as it only can be in England in May. The surface of Kop Hill left a good deal to be desired, as it was extremely rough throughout the whole course, and more especially near the top, where there was a deep rut, which occasioned one spill and nearly accounted for several others. But for the surface this gradient is nearly ideal for a competition. It is safe, almost straight, and the progress of the climb can be seen almost from start to finish. The organisation was excellent. Every competitor wore a legible number, and the smart way in which the men were sent up was especially noteworthy. As each man made his ascent he returned to the starting point by a different way, and without inconveniencing anybody and without waste of time he was back at his post and ready to start again. As regards entries, the event was a record, as no less than 250 had been received, and it speaks well for the organisation when we say that the whole competition took but 3h. 25m. to complete.

The event was divided into two divisions—A, for any type of motor cycle; B, for riders who had not won a prize in an open hill-climb with standard touring machines. The first class was run off first. This was for lightweights not exceeding 110 lbs., pedalling allowed. Since the latter concession was made, naturally people took the greatest possible advantage of it, and in certain cases the man appeared to work even harder than his engine.

Yates (2 h.p. Humber), fast, but pedalled. Stanley, on one of the new 2½ h.p. Singers with an engine 65 × 80, side by side valves, came up well, but pedalled, and succeeded in distinguishing himself, as will be seen by the result. T. Rigby (2½ h.p. Speedwell) changed speed, and made a very good ascent. Mrs. De Lissa (2 h.p. Motosacoche) came up well. J. Holroyd (2½ h.p. Motosacoche), fast, but pedalled. D. R. O'Donovan (2 h.p. Singer) pedalled hard, as also did Eli Clarke (2¾ h.p. Douglas). The results were:

Result on formula.		Result on time.	M.	S.
B. Yates (2 Humber) ...	.57	G. Stanley (2½ Singer)	1	8⅖
S. Wright (2 Humber)...	.60	T. Rigby (2½ Speedwell)	1	12⅘
G. E. Stanley (2½ Singer)	.70	B. Yates (2 Humber)	1	14⅘

The next event was Class III., for twin-cylinder machines not exceeding 146 lbs., 345 c.c. H. G. Dixon (2¾ h.p. New Hudson) and H. V. Colver (2¾ h.p. Enfield) came up in splendid style. This was Colver's second appearance after his new appointment with the Enfield Co., and, it will be noticed, it was crowned with success. H. Cox (2¾ h.p. Forward) came up well, as also H. Greaves (2¾ h.p. Enfield) and Miss Hammett (2¾ h.p. Douglas). G. L. Fletcher (2¾ h.p. Douglas) stopped with broken chain caused by a stone.

Formula.			M.	S.
H. V. Colver (2¾ Enfield)	.64	H. Colver (2¾ Enfield)	0	54⅗
H. Dixon (2¾ N. Hudson)	.80	H. G. Dixon (2¾ New Hudson)	1	5⅖
W. Douglas (2¾ Douglas)	.82	H. Greaves (2¾ Enfield)	1	7⅖

Class VI., for twin-cylinder machines not exceeding 750 c.c., was next run off. Barnes (6 h.p. Zenith-Gradua) came up at a tremendous speed, while H. Hill (5 h.p. Bat), S. F. Garrett (5 h.p. Indian), A. J. Luce (5 h.p. Bat), J. Thompson (5 h.p. Indian), and G. S. N. Carter (5 h.p. Matchless) all made excellent ascents. S. T. Tessier (5 h.p. Bat) came up very fast, but wobbled, and nearly had a spill on reaching the summit, nevertheless he made fastest time.

Formula.			M.	S.
†G Patterson (2¾ New Hudson)	.75	S. T. Tessier (5 Bat)	*0	40⅖
†S. T. Tessier (5 Bat)...	.75	F. Barnes (6 Zenith)	0	41⅗
F. W. Barnes (6 Zenith)	.79	H. Hill (5 Bat) ...	0	44
J. Thompson (5 Indian)	.84			

†Dead heat. *Fastest time of day.

Class II., for machines 146 lbs. and 300 c.c.—B. Yates (2 h.p. Humber) came up slowly. H. Berwick, on a similar machine, both assisted with his feet and pedalled. S. Wright (2 h.p.

General view of Kop Hill, a contour section of which appeared in our last issue. J. H. Slaughter (3½ L.M.C.) is seen coming up.

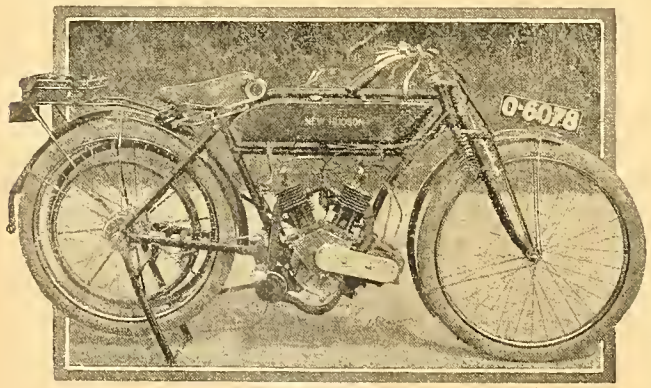
The Herts. County Open Hill-climb.—

An incident near the top of Kop Hill. S. Wright (3½ Humber), second in Class IV. on time (Division B), overtaking H. Berwick (Humber lightweight).

Humber) made a good ascent, while G. E. Stanley (2½ h.p. Singer) performed even better. A. Fripp (2½ h.p. Singer), G. Bell (2½ h.p. New Hudson), G. Patterson, jun. (2¾ h.p. New Hudson), and H. G. Dixon (2¾ h.p. New Hudson), all came up in good form. B. Marians (2½ h.p. P. and M.) assisted with his feet.

Formula.		Time	M.	S.
G. Patterson, jun (2¾ New Hudson) ...	.552	G. Patterson, jun. (2¾ New Hudson) ...	0	54⅕
G. E. Stanley (2½ Singer)	.623	G. Stanley (2½ Singer)	0	61⅕
H. G. Dixon (2¾ New Hudson)	.650	H. Dixon (2¾ New Hudson)	0	61⅕
		G. Bell (2½ New Hudson)	1	11⅕

Class IV., for single-cylinder machines not exceeding 557 c.c.—The three Triumph riders, Crawley, McMinnies, and Newsome, made brilliant ascents, while the remainder came up in good form. These were B. Yates (2 h.p. Humber), S. Wright (2 h.p. Humber), G. E. Stanley (3½ h.p. Singer), D. R. O'Donovan (3½ h.p. Singer), G. Patterson and H. G. Dixon (2¾ h.p. New Hudsons), P. Brewster (3½ h.p. Norton), W. H. Else (3½ h.p. Rudge), E. A. Colliver (3½ h.p. Zenith), J. H. Slaughter (3½ h.p. L.M.C.), F. W. Barnes (2¾ h.p. Zenith), W. Cooper (3½ h.p. Bradbury), H. L. Cooper, C. C. Cooke, W. S. Bennett, L. T. Rhys, and T. G. Baxenden (3½ h.p. Triumphs), A. L. Ommaney (3½ h.p. Rudge), W. Pratt (3½ h.p. P. and M.), and A. D. Arter and T. Pollock (3½ h.p. James).



The twin-cylinder touring New Hudson with side-by-side valve J.A.P. engine, which won the twin lightweight class at the Bristol club's hill-climb, and was second in Class III. of the Herts. County A.C. Kop Hill climb.

Formula.		Time	S.
F. W. Barnes (2¾ Zenith)	.50	W. McMinnies (3½ Triumph)	43⅘
G. Patterson (2¾ New Hudson)	.52	S. Crawley (3½ Triumph)	44⅘
H. G. Dixon (2¾ New Hudson)	.60	W. Newsome (3½ Triumph)	45⅖

Class VII., for any twin-cylinder machine.—In this class there was some little excitement. S. T. Tessier (5 h.p. Bat) dismounted near the summit owing to a sooted plug. A. J. Luce (5 h.p. Bat) made a capital ascent, but on his way up a stray Irish terrier careered down the course heedless of all appeals to stop, but very fortunately turned aside in sufficient time to avoid impeding the competitor. O. C. Godfrey (7 h.p. Indian) came up fast, but swerved in the rut near the top. P. W. Bischoff (6 h.p. Zenith) was climbing the hill in splendid style, but on the crest of the hill he had one hand only on the handle-bar while the other was working the gear. One hand, however, was not sufficient on the rutty surface, and swerving, he fell heavily, throwing off the front tyre, buckling his wheel, and cutting his knee rather badly. Excellent ascents were made by H. G. Dixon (2¾ h.p. New Hudson), H. Greaves and H. V. Colver (2¾ h.p. Enfields), F. W. Barnes (6 h.p. Zenith), H. Hill (5 h.p. Bat), C. M. Down, S. F. Garrett and J. Thompson (5 h.p. Indians), G. S. Carter (5 h.p. Matchless), and W. Douglas (2¾ Douglas).

Formula.			S.
H. V. Colver (2¾ Enfield)	.64	F. W. Barnes (6 Zenith)	43⅕
F. W. Barnes (6 Zenith)	.82	H. Hill (5 Bat)	43⅖
†H. Hill (5 Bat)	.83	G. S. Carter (5 Matchless)	43⅘
†W. Douglas (2¾ Douglas)	.83		

†Dead heat.

G. E. Stanley (3½ Singer) travelling well. In the 110 lb. lightweight class Stanley was first on time, riding the new 2½ h.p. Singer.

Class V., for any single-cylinder machine.—This class opened with a duel between the two 2 h.p. Humber riders, H. Berwick and S. Wright, the latter passing the former on the crest of the hill. As will be seen later, three Triumph riders again succeeded in making the three fastest times, McMinnies, Newsome, and Crawley coming up the gradient in splendid style. Excellent ascents were made by G. Patterson, jun. (2¾ h.p. New Hudson), P. Brewster (3½ h.p. Norton), E. A. Colliver (3½ h.p. Zenith), J. H. Slaughter (3½ h.p. L.M.C.), F. W. Barnes (2¾ h.p. Zenith), P. Weatherilt (3½ h.p. Zenith)—Weatherilt's machine was fitted with the T.T. regulation "silencer," a long pipe carried from the exhaust union to the rear axle—W. Cooper (3½ h.p. Bradbury), G. E. Stanley (3½ h.p. Singer), H. G. Dixon (2¾ h.p. New Hudson), H. L. Cooper, C. C. Cooke, and L. T. Rhys (3½ h.p. Triumphs).

Formula.			S.
F. W. Barnes (2¾ Zenith)	.51	W. McMinnies (3½ Triumph)	44⅕
H. G. Dixon (2¾ New Hudson)	.63	W. Newsome (3½ Triumph)	44⅖
W. G. McMinnies (3½ Triumph)	.65	H. Lister-Cooper (3½ Triumph)	45⅕

The Herts. County Open Hill-climb.—

Class IX., passenger machines.—O. C. Godfrey (7 h.p. Indian and sidecar) came up fast, but his front wheel wobbled badly. G. Lee Evans, similarly mounted, made a fast ascent; his passenger was barely visible. F. W. Barnes (6 h.p. Zenith and sidecar) came up in excellent form.

We give the times below. Formula results not yet issued.

	Bore and stroke.	Time. M.	S.
F. W. Barnes (6 Zenith and sidecar)	76 × 82	1	4
G. Lee Evans (7 Indian and sidecar)	82.5 × 93	1	13⅕
O. C. Godfrey (7 Indian and sidecar)	82.5 × 93	1	25

Class X., flexibility test.—No gears or clutches were allowed to be used, and the same gear ratios had to be employed as were used in the other classes. The competitor who had the largest difference between his fastest time in any one class and his slowest time in the flexibility test to be the winner.

This class was somewhat amusing, as one after another of the men stopped owing to trying to travel as slowly as possible. Only three reached the summit, and very few even came within sight of our observation point. D. R. O'Donovan (3½ h.p. Singer) stopped near the top of the hill, W. Cooper (3½ h.p. Bradbury) stopped a little higher up, while A. L. Ommaney (3½ h.p. Rudge) came to a standstill in the same place. A. J. Luce (5 h.p. Bat) made the first clean ascent. S. T. Tessier (5 h.p. Bat) came to a standstill. G. S. N. Carter (5 h.p. Matchless) made a good performance, but seemed a trifle too fast. W. Pratt (3½ h.p. P. and M.) came up in excellent form. Result:

	Slowest.	Fastest.	Diff.
A. J. Luce (5 Bat)	3 33⅕	0 44⅕	2 49
A. L. Ommaney (3½ Rudge) ...	3 9⅖	0 52⅖	2 17⅕
W. Pratt (3½ P. and M.)	3 33⅕	1 19⅗	2 13⅖

Class VIII., for any type of motor bicycle, fastest time to win.—As will be seen from the results, the Bat machines scored heavily in this event, as Tessier and Luce gained first and second places respectively, while Carter (Matchless) and McMinnies (Triumph) tied for third place. Brewster (Norton) was coming up the hill in his best style when, owing to a sooted plug his engine suddenly stopped. Newsome (3½ h.p. Triumph) again rode splendidly. A. L. Ommaney (3½ h.p. Rudge) dismounted. Excellent ascents were made by G. E. Stanley (3½ h.p. Singer), E. A. Colliver (5 h.p. Zenith), J. H. Slaughter (3½ h.p. L.M.C.), S. Crawley, H. L. Cooper, and C. C. Cooke (3½ h.p. Triumphs), T. Brunton and A. J. Luce (5 h.p. Bats), J. Thompson and C. Godfrey (7 h.p. Indians).

S. T. Tessier (5 Bat)	85.5×58	...	41s.
H. Hill (5 Bat)	85.5×58	...	43⅖s.
A. J. Luce (5 Bat)	85.5×58	...	44⅕s.
G. S. N. Carter (5 Matchless)...	88 ×65	...	44⅖s.

Division B. Class I.

Without delay Division B, open to riders who have not won a prize in an open hill-climb with standard touring motor cycles, was next begun. Class I., for lightweights not exceeding 110 lbs. in weight, again provided a splendid exhibition of pedalling. Yates and Berwick (2 h.p. Humbers) pedalled. T. Rigby (2½ h.p. Speedwell) made a clean ascent, while the samo may be said of Mrs. de Lissa (2 h.p. Motosacoche), whose clean, slow, and sure performance evoked applause. D. R. O'Donovan (2 h.p. Singer) and S. J. Pilcom (2½ h.p. Hobart) reached the summit after some physical effort.

Formula.		Time M.	S.
A. Yates (2 Humber) ...	.59	T. Rigby (2½ Speedwell)	1	8⅖
H. Berwick (2 Humber)	.64	B. Yates (2 Humber)	1	17⅕
T. Rigby (2½ Speedwell)	.85	H. Berwick (2 Humber)	1	17⅗

Class V., T.T. single-cylinder machines not exceeding 557 c.c.—C. C. Cooke, the hard-working hon. sec., made fastest time, with another Triumph rider (T. G. Baxenden) next in order, their positions being reversed on formula; R. Croucher succeeded in bringing his 3½ h.p. Kerry-Abingdon into prominence by making third fastest time. Excellent ascents were made by W. H. Elce (3½ h.p. Rudge), W. S. Bennett (3½ h.p. Triumph), A. D. Arter and T. Pollock (3½ h.p. James), W. Cooper (3½ h.p. Bradbury), E. C. Jarvis (3½ h.p. Triumph), O. Dunham, B. Cumberland, and E. C. Heiss (3½ h.p. Triumphs).

Formula.		Position on time.	s.
T. G. Baxenden (3½ Triumph)	.66	C. C. Cooke (3½ Triumph)	50⅖
C. C. Cooke (3½ Triumph)	.77	T. Baxenden (3½ Triumph)	50⅘
R. Croucher (3½ Kerry)	.85	T. Pollock (3½ James)...	51

Class III., for twin-cylinder machines not exceeding 146 lbs. or 343 c.c.—G. Bell (2¾ h.p. New Hudson), H. Cox (2¾ h.p. Forward), and the two Enfield riders, Colver and Greaves, all made excellent ascents. Miss Hammett (2¾ h.p. Douglas) was heartily applauded.

Formula.			M.	s
H. V. Colver (2¾ Enfield)	.64	H. Colver (2¾ Enfield)	0	55⅖
G. Bell (2¾ New Hudson)	.81	G. Bell (2¾ New Hudson)	1	4⅕
H. Greaves (2¾ Enfield)...	.84	H. Greaves (2¾ Enfield)	1	5

Class IV., single-cylinder touring machines not exceeding 557 c.c.—All the following came up in good style: H. Berwick (2 h.p. Humber), S. Wright (3½ h.p. Humber), C. C. Cooke (3½ h.p. Triumph), W. Pratt (3½ h.p. P. and M., low gear), H. J. Pooley (3½ h.p. Premier), H. Patterson (2½ h.p. New Hudson), E. C. Jarvis and A. N. Gutteridge (3½ h.p. Triumphs), H. A. Smytheman (3½ h.p. L.M.C.), and D. R. O'Donovan (3½ h.p. Singer). Dr. W. W. Anderson (3½ h.p. Triumph) almost failed on the crest through belt slip.

Formula.			s.
H. Patterson (2½ New Hudson)	.53	A. L. Dixon (3½ Rudge)	50⅕
A. L. Dixon (3½ Rudge)...	.59	S. Wright (3½ Humber)	56⅕
H. Berwick (2 Humber) ...	.73	G. Cooper (3½ Triumph)	57

Class VII., any twin-cylinder, 750 c.c.—G. Bell (2¾ h.p. New Hudson), H. Cox (2¾ h.p. Forward), H. V. Colver (2¾ h.p. Enfield), H. Greaves (2¾ h.p. Enfield), A. Pitkin (5 h.p. Indian), A. Brunton (5 h.p. Bat), C. M. Simpson (7 h.p. Indian), who appeared to be travelling extremely well, and H. Goldman (7 h.p. Rex) all made good performances, but T. Rice Pyle (7-8 h.p. Bat) stopped on trying to change into top speed.

Formula.			s.
H. V. Colver (2¾ Enfield)	.65	C. M. Simpson (7 Indian)	47⅕
H. Greaves (2¾ Enfield)	.81	A. Brunton (5 Bat) ...	53
A. Pitkin (5 Indian) ...	.91	H. V. Colver (2¾ Enfield)	55⅖

Class II., single-cylinders not exceeding 146 lbs. or 300 c.c.

Formula.			M.	s.
A. S. Bright (2½ New Hudson)	.73	A. Bright (2½ N. Hudson)	1	10
B. Yates (2 Humber) ...	.86	H. Berwick (2 Humber)	1	44⅖

Class VI., any type of single-cylinder machine.—Just as this class had begun to be run off a cold wind began to blow, and in a few minutes almost every spectator left the hill. Nothing exciting occurred, and all the following came up in good form: S. Wright (3½ h.p. Humber), C. C. Cooke and W. S. Bennett (3½ h.p. Triumphs), H. Berwick (2 h.p. Humber), T. G. Baxenden (3½ h.p. Triumph), H. Patterson (2¾ h.p. New Hudson), E. C. Jarvis, G. F. Cooper, H. O. Dunham, B. Cumberland, and A. N. Gutteridge (3½ h.p. Triumphs), and R. Croucher (3½ h.p. Kerry). Three Triumphs were again first, second, and third on time.

Formula.			s.
H. Patterson (2¾ N. Hudson)	.57	C. C. Cooke (3½ Triumph)	52⅕
T. Baxenden (3½ Triumph)	.69	T. Baxenden (3½ Triumph)	53⅕
H. Berwick (2 Humber)	.79	W. Bennett (3½ Triumph)	56⅖

Class X., flexibility test, run as in Division A.—The competitors had now learned a lesson, and there were fewer failures. D. R. O'Donovan (3½ h.p. Singer), W. Pratt (3½ h.p. P. and M.), W. Cooper (3½ h.p. Bradbury), and C. C. Cooke (3½ h.p. Triumph) all made clean ascents. C. M. Simpson (7 h.p. Indian) was either very low geared or his clutch was slipping. Results:

	Slowest.	Fastest.	Diff.
W. Pratt (3½ P. and M.)	3 33⅕	1 38⅕	1 55
A. J. Luce (5 Bat)	2 16⅕	0 44⅕	1 32

The proceedings concluded with Class VIII., for any type of machine, fastest time to win. All the following made good ascents: W. S. Bennett (3½ h.p. Triumph), T. G. Baxenden (3½ h.p. Triumph), A. Pitkin (5 h.p. Indian), A. Brunton (5 h.p. Bat), A. J. Dixon (7 h.p. Rex), C. M. Simpson (7 h.p. Indian), H. Goldman (7 h.p. Rex), H. Walker (7 h.p. Indian), T. Rice Pyle (7-8 h.p. Bat), and W. Cooper (3½ h.p. Bradbury).

	mm.	secs.
A. J. Dixon (7 Rex) ...	84.5 × 89	0 45⅖
C. M. Simpson (7 Indian) ...	83 × 93	0 49
C. C. Cooke (3½ Triumph) ...	85 × 88	0 51⅖

CURRENT CHAT

TIME TO LIGHT LAMPS

SPECIAL FEATURES

(GREENWICH)

May 11th	...	8.37 p.m.
,, 13th	...	8.40 p.m.
,, 15th	...	8.43 p.m.
,, 17th	...	8.46 p.m.

Long Distance Coast Ride.

F. Dover, who will commence his coast ride on Whit-Monday, has decided to ride a 3½ h.p. 1911 Premier.

An Early Attempt on the Six Days' Record.

C. Williams, of Yeovil, started on Friday last to beat A. E. Catt's six days' record. Riding a 3½ h.p. Triumph, we are told that he covered 440 miles for two days, but retired on the third day.

Quarterly Trial in Yorkshire.

A slight error crept into the judges' report of the Spring Quarterly Trial. All four New Hudson machines, which performed so conspicuously, had Armstrong-Triplex gears, not three as stated.

Scottish Rider in the States

Jas. Baxter, a well-known Scottish motor cyclist who is at present in the States, will ride his 7 h.p. Rex at a race meeting promoted by the Springfield M.C.C. on Memorial Day, May 30th.

Results of the Bristol Club's Hill-climb.

All the formula winners given in our last issue, page 447, have now been confirmed. The protest against the twin New Hudson, ridden by H. G. Dixon, has been disallowed, likewise the protest against the silencer of J. H. Slaughter's L.M.C. In the ladies' class Miss Baxter (3½ Rex) is declared winner, with Miss Hind (7 h.p. Rex) second.

A Comprehensive Issue.

The results of over a score of club competitions which have taken place in all districts during the last few days are given in this issue. The number of news paragraphs concerning motor cycle clubs in England, Scotland, and Ireland number over thirty.

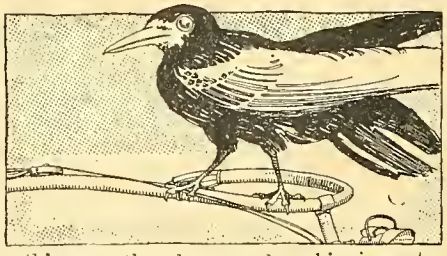
Imports of Motor Cycles.

The number of motor cycles imported last month was 203, showing an increase of forty on the corresponding month of last year, while in 1909 the total number was only nineteen less than the present year. The figures for April for the last three years, together with those of the parts, were:

1909.	1910.	1911.
Motor cycles—		
£5,023	£5,078	£6,253
Parts thereof—		
£1,351	£5,942	£5,853
£6,374	£11,020	£12,106

British Exports.

The Board of Trade returns just issued show that during April the exports of motor cycles and parts in 1909 were valued at £2,591 and £3,597 respectively, a total of £6,188. In 1910 the figures had increased to £6,204 and £4,992, showing a total of £11,196, while



this year they have made a big jump to £14,499 and £7,840—in all a total of £22,339.

FUTURE EVENTS.

May 13th—South-east London M.C.C. Open Hill Climb.
,, 17th (Wed.)—B.M.C.R.C. Third Members' Meeting at Brooklands.
,, 27—Herts. County A.C. Open Speed Trials.
June 2-5—M.C.C. London-Edinburgh Run and Return Journey for the M.C.C. Challenge Cup.
,, 5 (Whit Monday)—Brooklands A.R.C. Meeting.
,, 5—Dublin and District M.C.C. Open Reliability Trial to Lisburn.
,, 10—A.C.U. Race Meeting.
,, 10—Nottingham and District M.C.C. Open Speed Trial at Clipstone.
,, 10—Birmingham M.C.C. Open Hill Climb Shelsley Walsh.
,, 17—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
,, 30—Junior T.T. Race in the Isle of Man.
July 3—Senior T.T. Race in the Isle of Man.

THE SIX DAYS' LONG DISTANCE RECORD.

A. E. Catt (3½ h.p. Triumph) restarting on Tuesday during his successful attempt to set up a new long distance record for six days.

The New Record: 2,557 Miles in Six Days.

Carbonisation in Practice and Theo

Open Hill-climbs North and South

The Six Hours' Record.

Lieut. R. N. Stewart, who rece broke the six hours' record for 500 engines at Brooklands, informs us he has every intention of again atte ing the 300 miles in six hours.

A Premier Lightweight.

The Premier Cycle Co., Ltd., ha view, at its London address, a l weight pattern motor cycle on stan lines, with Motosacoche engine set Druid spring forks.

2,557 Miles in Six Days.

Albert E. Catt, of Northampton, last week, covered the unprecede distance of 2,557 miles in six day writing an exclusive account of experiences for this journal. The a will be published in our next issue.

Another Ladies' Competition.

A second lady motor cyclists' com tion is on the *tapis*, which will be less arduous nature than the 400 trial from Barnet to Harrogate and at Easter. It is proposed to mak trial of one day's duration. The County A.C. (motor cycle section) again organise the event.

New Model Centaurs.

A new company has acquired the trademarks, and patents of the Ce Cycle Co., Ltd. Within the near f the following new model Centaur cycles will be placed on the ma 2 h.p. single-cylinder single speed, 2 single-cylinder three speeds, 3½ single-cylinder single speed, 3½ single-cylinder three speeds, and 3½ twin-cylinder with single or three-gear. Truly, an enticing range!

The London-Edinburgh Run.

The following entries have been re for the above run, which will take June 2nd-5th:

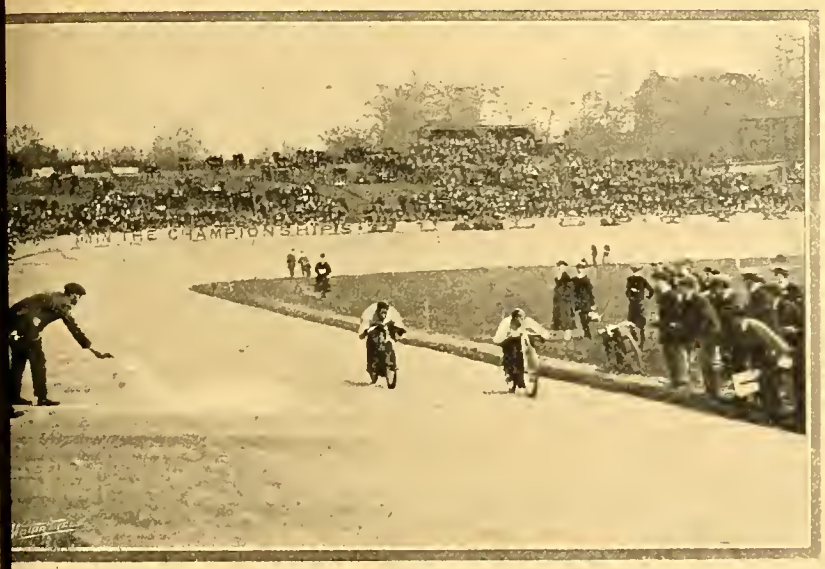
MOTOR BICYCLES.

Single Journey.—H. G. Bell and Millar (5-6 F.N.), J. Haslam (3½ Ze E. Gwynne (3½ T.T. Triumph), Dickson (7 Indian), W. Pratt (3½ M.), O. C. Godfrey (7 Indian), Turner (3½ Triumph), R. M. Bri Brown), C. Gordon Watson (5-6 F.N T. A. Oldfield, and C. Lake (2¾-3 A

COMBINATIONS.

Sidecars.—W. H. Wells (7 India sc.), G. Lee-Evans (7 Indian and sc Mabon (3½ Rudge and sc.), and Haynes (8 Bat and sc.)

Double Journey for M.C.C. Cu R. Haswell (3½ Triumph), R. C. Wells (3½ Bradbury), G. E. Brig Triumph), A. T. Stanton (3½ Brad and Geoffrey England (2¾ M.R.).



ROVER SPORTS AT THE ASTON TRACK LAST SATURDAY.

A disputed heat in the three miles race, after which the Birmingham men withdrew, no final being run. Note that the pistol anticipated the finish and W. Chitty passed on near side of J. W. Woodhouse. P. J. Evans is out of sight, half a lap in front.

enclature.

nice question of nomenclature is en- ng the attention of racing motor cycle es. Can R.-W. machines be re- stened Ridges or the rider be altered to udge? While we strongly deprecate high feeling that is being engendered, sympathies go out to the advertise- writer who wishes to talk of Sur- e *Sur Rudge*.

Rosier's Visit to England.

De Rosier, the well-known Indian nent, is expected to arrive in and on or about June 1st. W. H. s informs us that he has invited De er to accompany him in his 7 h.p. n and sidecar in the London to burgh run. This would be a most esting experience for an American , a stretch of good roads like the miles from London to Edinburgh unknown in the States.

National Motoring Council.

th reference to the proposed forma- of the National Motoring Council, ave received a copy of a letter which been addressed to the secretary of R.A.C. by the secretary of the A.A. M.U. The gist of this letter is that A.A. and M.U. is not satisfied with method of representation on the cil, and although they do not est that representation should be ly proportionate to membership, the ittee has decided not to attend the sted preliminary conference until question of representation has been d. At present the same representa- is allotted whether the association ociety has a small or very large bership.

Cycle Union Notes.

RMITS.—Permits have been granted for following events: The M.C.C. team for *The Motor Cycle* Cup, on June Tunbridge Wells, three and five miles caps and three miles scratch race, June 5th; West Ham United F.C., Canning Town, May 20th; Mersey M.C.C., open hill-climb, August 26th; and East London M.C.C., open hill-climb, May 13th.

PROPOSED R.A.C. ASSOCIATES' RACE MEETING AT BROOKLANDS.—An excellent suggestion (which has since been adopted) has been made to hold an R.A.C. Associates' race meeting at Brooklands on July 29th. It has further been suggested that motor cycle clubs affiliated to the R.A.C. through the A.C.U. should send four representatives each to compete in two four lap races, one open to machines with engines of 500 and the other to machines with engines not exceeding 1,000 c.c. (multi-cylinder). The idea to include motor cyclists will most probably be adopted, and every effort will be made to render the meeting a social success. It is proposed that a band should be in attendance during the meeting, and that the R.A.C. Associates' dinner should be held in town the same evening.

TIMEKEEPERS' APPOINTMENTS. — The existing timekeepers to the A.C.U. have been reappointed from the 19th ult., while a new name added to the list is that of Mr. D. K. Hall.

THE A.C.U. FORMULA AND CLASSIFICATION OF MOTOR CYCLES.—The A.C.U. sub-committee has been instructed by the General Committee to consider the question of adopting a new hill-climbing formula, and also to separate machines taking part in competitions into the following classes, light, medium, and heavy.

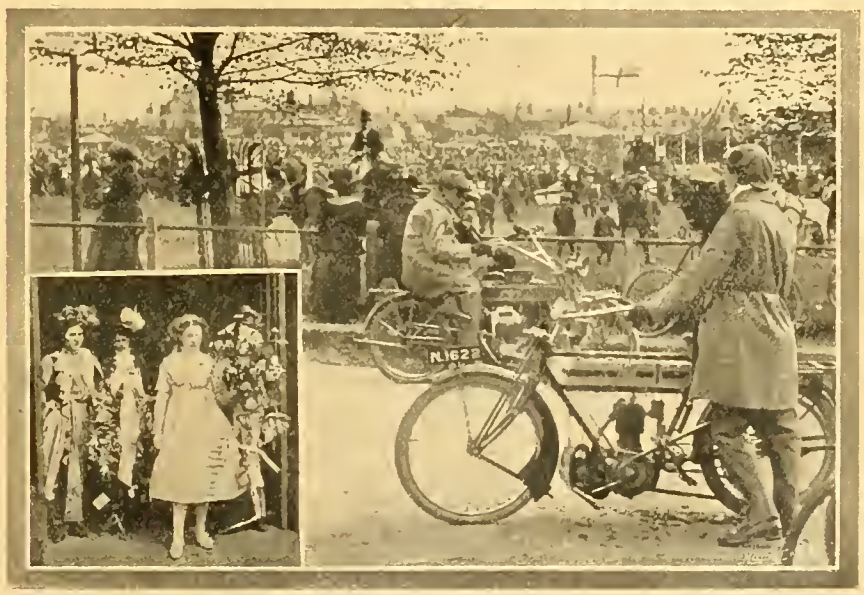
THE AUTO CYCLE UNION AND THE NATIONAL AUTOMOBILE COUNCIL.—The Auto Cycle Union has agreed in principle with the scheme of the National Automobile Council, and has appointed Messrs. Harding and Hart as its representatives on that body.

MEMBERSHIP.—One hundred and fifty-four new members were elected at a recent committee meeting.

AFFILIATIONS.—The Oldham and District and the Reading and District Clubs have become affiliated to the governing body.

THE NEW MEMBERSHIP SCHEME.—The above scheme is now in full working order, and a large influx of members is coming in. Application for membership should be made to the secretary, Mr. F. Straight, R.A.C. Buildings, Pall Mall, S.W.

RECORDS PASSED.—The standing mile record of 1m. 14⅘s. for machines not exceeding 76 by 75, made by H. Martin at Canning Town on Tuesday, April 11th, has been passed by the A.C.U. Competitions Committee.



CROWNING THE MAY QUEEN.

The scene at Knutsford Heath on May Day. Many motor cyclists attended the ancient ceremony. Inset, the May Queen leaving the Town Hall.

INTER-CLUB HILL-CLIMB AT ALTON.

SURREY v. HANTS.

ON Wednesday, the 3rd inst., the joint competition between the Surrey M.C.C. and the Hampshire Motor Cycle Union took place in boisterous weather. The competitors met at the Swan Hotel, Alton, at 3.30 p.m., and then proceeded to a hill about two miles away on a by-road, the surface of which was as bad as it could be. Great gulleys were encountered running diagonally across the road, and the surface itself was rough and furrowed with ruts. Unfortunately, the organisation was not of the best. There was some delay in laying the telephone wires, and when laid this "sign of civilisation" refused to work, and much time was spent in persuading it to do so, but all to no purpose. Finally, it was decided to time the men in the ordinary way. But the best of the day had gone, and the rain began to pour down on the luckless competitors, while the gale also vented its fury upon them.

The surface, to add insult to injury, later became so greasy that even foothold was difficult to retain in places. In **Class I.**, for machines with engines not exceeding 340 c.c., pedalling allowed. Barnes (Zenith) and Slatter (Alcyon) made splendid ascents. This was the first appearance of Alcyon motor bicycles in a club hill-climb in England, and the fact that Slatter gained second place is worthy of mention. Little's 2½ h.p. Motosacoche came up well, but was aided by a stroke or two of the pedals.

Class II. was for 500 c.c. touring machines. Barnes again made a fine ascent. Lawes (5-6 h.p. F.N.) dismounted. Spread (3½ h.p. Trump) went up in excellent style.

In Class III. for passenger vehicles the only tricar—a Riley—came to a standstill quite low down on the hill. J. Cox, who was driving a 3½ h.p. Zenith and sidecar, failed near the top through belt slip; while A. J. Atkings (5-6 A.C.) just got up, his trouble being the slipping round of the back wheel owing to the greasy state of the road. In fact, a well-known make of car fitted with a plain tyre on one wheel could not make a restart on the gradient for this reason, and would never have moved but for the assistance of seven kind helpers.

Class IV. was open to all types. A. J. Luce (8 h.p. Bat) came up fast and skidded slightly. McNab also went up in good form, but owing to the grease was thrown almost into the bank before he happily recovered himself. King and Arden, both riding Bradburys, went up in good form, and Little's Motosacoche also made a good ascent. The results were worked out on A.C.U. formula. Results:

CLASS I.

1 F. W. Barnes, 2¾ Zenith (S)
2 N. Slatter, 2 Alcyon (S)
3 T. Little, 2½ Motosacoche (H)
4 T. Pool, 1¾ Motosacoche (H)

CLASS II.

1 F. W. Barnes, 3½ Zenith (S)
2 R. R. Spread, 3½ Trump (S)
3 B. Tebbutt, 3½ B.S.A (H)
4 E. Cox, 3½ Zenith (S)
5 A. Nelson, 3½ Kerry-Abingdon (H)
6 C. Feeney, 3½ Triumph (S)
7 G. Tungate, 3½ Calthorpe (H)
8 S. Figg, 3½ Quadrant (H)

CLASS III.

1 A. J. Atkings, A.C. Sociable (S)

CLASS IV.

1 F. Barnes, 2⅞ Zenith (S)
2 F. McNab, 3½ Trump (S)
3 J. Kennedy, 3½ Bradbury (H)
4 E. Cox, 3½ Zenith (S)
5 A. Baker-White, 3½ Trump (S)
6 R. Spread, 3½ Trump (S)
7 R. Coupe, 3½ Triumph (H)
8 A. Longley, 5 Indian (H)
9 C. King, 3½ Bradbury (H)
10 L. Arden, 3½ Bradbury (H)
11 T. Little, 2½ Motosacoche (H)
12 A. J. Luce, 5 Bat (S)
13 G. Loke, 3½ Bradbury (H)
14 S. Docking, 3½ Bradbury (H)

Fastest time of the day was made by F. W. Barnes (Zenith) in Class I. (60⅖s.)

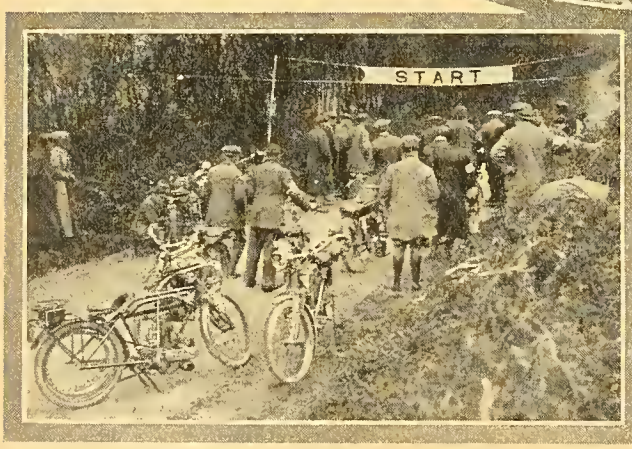
Average of twelve best performances on formula on each side:

Surrey M.C.C. ... 1007
Hampshire M.C.U.... 817

Surrey M.C.C. wins the cup presented by Mr. Kennedy.

H denotes a member of the Hants M.C.U.

S denotes a member of the Surrey M.C.C.



INTER-CLUB HILL CLIMB AT ALTON.

1.—A competitor climbing the steepest portion. 2.—Scene at the starting point. 3.—Some of the competitors before the start.

M.C.C. BROOKLANDS RACE MEETING.

An additional item in the club race meeting at Brooklands on July 8th will be an hour's race, the prize for which will be a silver replica of the gold cup presented by Mr. Harry Smith. Forms detailing the various events to be included in the programme of this meeting will shortly be posted to members, and intending participants are asked to communicate with the captain, Mr. F. J. Jenkins, 35, Loveday Road, Ealing, W.

GLASGOW M.C.C. OPEN HILL-CLIMB.

N magnificent weather the Glasgow M.C.C. held its open Spring hill-climb on Saturday last, and commenced the Scottish competition season. The hill was the aptly named Stoneymoulin, near Balloch, which rises from Loch mond. The length is about 1,230 yards, and there are etches of 1 in 6. The corners are not bad, but two water-urses and the very rough surface made the ascent very ficult, the fastest riders being nearly thrown at times. e entries numbered forty-nine, and included a lady who s prevented from competing by machine trouble *en route*. e competitors came from all parts of Scotland and the erest taken in motor cycling in the West of Scotland s proved by the great number—some 100—of machines be seen at the foot of the hill. *The* ascent of the day s Hunter's in Class 3, on a 7 h.p. Indian. This rider is olutely devoid of nerves, and despite a damaged valve nt up at over forty miles an hour, but on a second empt tore the spokes out of his back wheel. Adamson T.T. fame made the best time in his class on his trusty umph, the beat of which was delightful as showing the fectly tuned engine.

he variably geared machines did well in their class, but majority of machines having a clutch only, failed to t on the up-grade selected for the test. The neatest t was that of Roberts on his 6h.p. Baddeley, who got top gear within a hundred yards and easily made est time in his class. The New Hudson also did ndidly, albeit not so fast as the others, and its clean t and quick pick up attracted much favourable com-nt. The Ariels also went away well, but a rider of a big chless created a diversion by charging a knot of spectators who went over like ninepins; happily none were hurt.

The formula used was:

$$\frac{\text{Weight}}{\text{Capacity} \times \text{gear} \times \text{time}} \quad (1.5)$$

which necessitates considerable calculation, with the result that the final awards are not yet available. The fastest times, gear ratios, etc., in the various classes were as follows:

CLASS I.—Lightweights up to 350 c.c.

		Gear ratio.	M.	S.
1.	T. L. Rankine (2¾ h.p. Enfield)	6.5 ...	1	48⅖
2.	D. S. Baddeley (2½ h.p. New Hudson)	7.96 ...	2	1
	W. Hutchinson (2¾ h.p. Douglas) ...	6.5 ...	2	1

Six entries, four starters.

CLASS II.—Singles over 350 c.c.

1.	J. W. Adamson (3½ h.p. Triumph) ...	5.32 ...	1	9⅘
2.	H. W. Ballardie (3½ h.p. Triumph) ...	4.5 ...	1	13⅕
3.	W. M. Branston (3½ h.p. G.A.C.S.) ...	5.15 ...	1	14⅖

Twenty-six entries, nineteen starters.

CLASS III.—Twins over 350 c.c.

1.	E. Hunter (7 h.p. Indian)	4.35 ...	1	3
2.	J. R. Alexander (5 h.p. Indian) ...	5.2 ...	1	7⅗
3.	W. Deans (5 h.p. Indian)	4.82 ...	1	13⅕

Eight entries, four starters.

CLASS IV.—Variably geared and clutch machines.

1.	J. Roberts (6 h.p. Baddeley) ...	4.1 and 8.2 ...	1	6⅕
2.	A. G. M'Lennan (3½ h.p. Triumph) ...	5.35 ...	1	20⅕
3.	F. Miller (3½ h.p. Triumph) ...	4.1 and 8.2 ...	1	23⅕

Nine entries, seven starters.

CLUB NEWS.

Edinburgh and District M.C., Ltd.

orms of entry for the open hill-climb at Manor Hill, bles, next Saturday, 13th May, at 3 p.m., may be had n the trials secretary *pro tem.*, T. E. Chalmers, 5, mmerside Street, Leith, N.B.

Scarborough and District M.C.

ntry forms, with full particulars of events and rules for members' gymkhana to be held on the Marine Drive, rborough, on the 27th inst., may be obtained from H. n, Snainton, Yorks. Entries close May 24th.

Proposed Club for Macclesfield.

n effort is being made to form a motor cycle club in clesfield and the surrounding district. Any motor ists who may be interested in this very sensible proposal asked to communicate with W. R. Blacksbaw, Flower Macclesfield.

Sheffield and Hallamshire M.C.C.

he club's opening hill-climb was held on May 6th on Snake, a long winding ascent of two and a half miles. re were thirty-five entries, and the results, which are g worked out on A.C.U. formula, will be announced week.

Hull and East Riding A.C.U.

he first of a series of three reliability trials was held on 6th inst., over a 100 miles course. Only four out of een entrants got through, these being R. Ellis (3½ h.p. horpe), Edgar (3½ h.p. Bradbury), Brown (3½ h.p. Rex), Stringer (3½ h.p. Bradbury).

Leicester and District M.C.C.

he joint run with the Notts and Lincoln Clubs to Belvoir Saturday is much looked forward to. After the first next Tuesday no entries can be accepted for the bers' hill-climb on Ling's Hill, near Branstone, on Thurs-May 18th.

The Northern League.

view of the military Sunday at York being fixed for 21st, the meet at Pocklington announced for that day not take place. Members of the League visiting York other motor cyclists will be welcomed by the president officials at the luncheon (1.30 p.m.) at the Royal Station l.

Western District M.C. (London).

The reliability trial to Bath and back for the Smart Cup resulted in five non-stop runs. Subject to confirmation of the committee, the result is a tie between W. F. Ritchie (5 h.p. N.S.U.) and F. Stallabrass (3½ h.p. Triumph): R. F. Addey (3½ h.p. Zenith) was third. The other non-stops were H. Hughes (6 h.p. N.S.U.) and A. E. Audemard (5 h.p. Rex).

Derby and District M.C.C.

The results of the speed-judging competition held on Saturday, May 6th, were as follows:

		Set speed per hour.	Actual speed.
1.	Geo. Taylor (3½ Rudge) ...	17½ ...	17.68
2.	A. Ainsworth (3½ Rudge) ...	18½ ...	18.09
3.	A. E. Mitcham (3½ J.A.P.) .	16 ...	15.35

Nottingham and District M.C.C. reliability trial over Derbyshire roads. Five competitors who made non-stop runs: F. P. Johnson, H. W. Horsnell, E. Trueman, G. Brough, and S. Kendall.

Club News.—

Oxford M.C.C.

A highly successful early morning social run was held on May 1st to Nuneham Harcourt, breakfast being taken at the Harcourt Arms, Nuneham, at 6.30. There was a splendid muster and the weather was ideal.

Inverness and District M.C.C.

This club, which has only recently been formed, now numbers upwards of thirty members, and any motor cyclists in the neighbourhood who may be interested are asked to communicate with the secretary, Mr. Simon Maclean, Culhurnie, Ross Avenue, Inverness.

Next Saturday there will be a run to the Falls of Rogie *viâ* Urray.

Lincolnshire A.C. (Motor Cycle Section).

The Wright challenge vase for the best performance of the day at the Leadenham hill-climb has been awarded to George Williamson, of Stamford, who made a wonderful climb on his 8 h.p. Bat-Jap.

Members are asked to note that the run to Belvoir Castle to meet the Nottingham and District and the Leicester and District M.C. clubs is fixed for Saturday next, the 13th May; start from the bottom of Cross o' Cliff Hill, Lincoln, at 2.30 prompt.

For the speed trials in Grimsthorpe Park on the 27th inst., entries close the first post on Thursday, the 25th May. Full particulars may be obtained from the hon. secretary, Mr. W. Howell Quine, the Union of London and Smiths Bank, Ltd., Market Rasen.

Burnley A.C.

The winner on formula in the two classes of the hill-climb at Thornyholme Brow, on the 22nd ult., were as follows:

Class I. Lightweights.—R. Hebden (2 h.p. Humber).

Class II. Any capacity.—T. Boothman (3½ h.p. Triumph).

The Kempshall anti-skid tyres for the fastest time of the day were won by T. Boothman.

Mersey M.C.

The results on A.C.U. formula of the hill-climb at Rivington Pike on the 7th inst. are as follows:

Single-cylinders from 340 c.c. to 600 c.c.—1, V. E. Horsman (3½ h.p. Bradbury); 2, F. C. Jones (3½ h.p. Bradbury).

Passenger Class.—F. C. Jones (3½ h.p. Bradbury with sidecar, single-geared).

Lightweights (340 c.c.)—S. W. Phillpott (2 h.p. Humber).

Burnley Auto Club's hill-climb at Thornyholme Brow. A rider of a 3½ h.p. Ariel making good time.

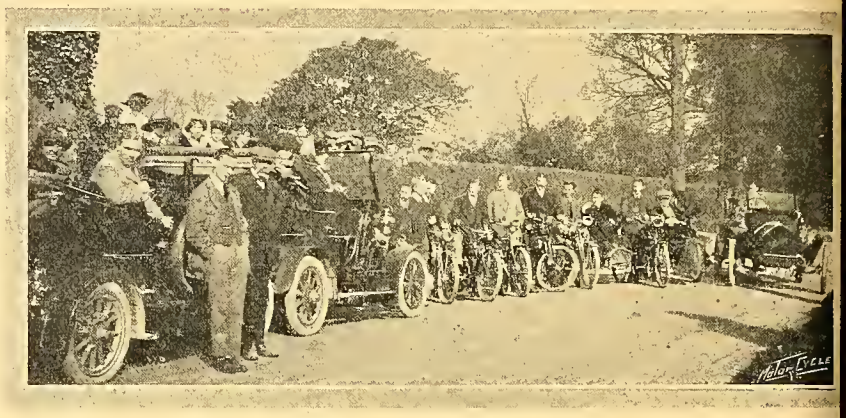
Twin Class (any c.c.)—R. P. Barker (9 h.p. Bat-Jap).

Fastest time of day.—V. E. Horsman (3½ h.p. Bradbury).

The club is much indebted to Messrs. A. J. Moorhouse and Charlesworth, of the Manchester M.C., who kindly acted as timekeepers.

North-west London M.C.C

On Saturday, May 20th, a twelve hours' reliability run for members only will be held from London to Coventry and back. The prizes will be silver cups and silver an



Oxford M.C.C. May morning social run to Nuneham Harcourt.

bronze medals. The start will take place from Jack Straw's Castle, Hampstead Heath, at 7 a.m. sharp, and the route will be *viâ* Watford, Aylesbury, Banbury, Warwick, and Kenilworth. Entries must be made on the forms which can be obtained with full particulars as to rules and conditions from the acting trials hon. sec., Mr. H. J. Pooley, 2 Clifton Avenue, Finchley, N., and no entry will be accepted later than the 16th inst.

Birmingham M.C.C.

The winners of the several classes engaged in the club opening hill-climb on the 29th ult. were as follows:

	Time.	Formula
Class A.—Lightweights.		
H. R. Fowler (2¾ New Hudson) ...	1 ...	1
H. J. Woodgate (2¾ Enfield) ...	2 ...	3
H. V. Colver (2¾ Enfield)	3 ...	2
Class B.—Single-cylinders.		
J. Pollock (3½ James) (fastest time) ...	1 ...	4
S. Smith (3½ Norton)	2 ...	3
R. W. Duke (3½ Zenith)	3 ...	1
B. Baxter (3½ Norton)	4 ...	2
Class.—Twin-cylinders.		
H. V. Colver (2¾ Enfield)	1 ...	1
H. J. Woodgate (2¾ Enfield)	2 ...	2
F. S. Whitworth (2¾ Enfield) ...	3 ...	3

Class D.—Passenger Machines (Time only).

H. C. Newman (3½ Ivy Precision and sidecar), 1.

Dr. B. Fawssett (8 Chater-Lea-Jap and Lowen sidecar), 2.

W. H. Egginton (6 Zenith and sidecar), 3.

Bradford M.C.C.

Forthcoming fixtures are as under:

May 7th.—Rex Cup reliability trial. (Gold medallists barred.)

,, 21st.—N.S.U. Cup reliability trial, Bradford-Keswick and back. (Trade barred.)

,, 27th.—Dyson Shield handicap hill-climb.

Dundee M.C.C.

Entries for the hill-climbing competition, which will be held on Wednesday, the 24th inst., close on the 23rd.

Herts County A.C.

The motor cycle speed trials will be held on the 27th inst. in Brookman's Park, Hatfield, and they will be divided into two divisions. In the club's endeavour to make its competitions quite up to date, a special prize of 10s. 6d. is offered for the best formula to be used in this trial. Suggestions should reach the hon. secretary, Mr. C. C. Cooke, Rose Cottage, North Mimms, Hatfield, not later than May 13th.

ub News.—

Howden M.C.C.

This new club held a reliability trial recently. The winner oved to be H. W. Bastow on a 2¼ h.p. Kerry, W. Padgett a 3 h.p. Bradbury being a good second.

Taunton M.C.C.

A motor cycle club has been formed for Taunton and the strict, and the opening run has been fixed for to-day hursday). The hon. sec. is Mr. W. G. Potter, 41, Belvere Road, Taunton, and Clarke's Hotel has been chosen r headquarters. It is hoped that the large number of otor cyclists in the district will join.

Sheffield and Hallamshire M.C.

Next Saturday the club meet at Hunter's Bar to compete r a 10s. prize offered for the first single-geared single-linder motor bicycle which climbs the hill from Edale to e top of Mam Tor.

On Saturday, the 20th inst., there will be a kilometre ed competition on Mam Tor Top.

Westmorland M.C.C.

The reliability run on April 30th, extending over a course 130 miles from Ingleton to Kirkby Stephen, Penrith, and swick, for the Quirk Challenge Cup and Rex prize, sulted as follows: 1, W. Hutchinson (3½ h.p. Bradbury); L. Pennington (3½ h.p. Triumph); 3, C. B. Robinson h.p. Singer). Members are asked to note that the rule t entries and entrance fees must be received two clear ys before the event will be strictly enforced in future.

Purley and District M.C.C.

The club's first hill-climb was run off at Titsey on Satur y, the 29th ult., in drenching rain, which made the rse very heavy. The results are as follows:

ass I.—Lightweights up to 300 c.c. for singles and 340 c.c. for twins.

Only two entrants, both of whom failed.

Class II.—Standard touring singles.

	Name and machine.	Time.	Fig. of merit.
1.	W. G. Fowler (Triumph) ...	68⅕s. ...	97
2.	H. Cooper (Bradbury)	62s. ...	99
3.	H. B. Willoughby (Triumph) ...	74⅘s. ...	115

ass III.—Any type of standard touring machine up to 1.000 c.c.

1.	W. G. Fowler (Triumph) ...	69⅗s. ...	99
2.	L. F. Ebbutt (Precision) ...	87⅕s. ...	129
3.	C. D. Bell (6 h.p. J.A.P.) ...	64⅘s. ...	139

Class IV.—Passenger machines.

1. W. Pratt (P. and M. and sidecar).

t should be stated that Pratt's time was not taken, by chance, owing to a non-competitor ascending the hill mediately before him and misleading the timekeeper; but alone surmounted the hill in Class IV., and therefore takes award.

Woolwich, Plumstead, and District M.C.

The hon. sec. will be glad to receive the names of any members who are anxious to represent the club in the M.C.C. inter-club team trial on June 17th.

Reading and District M.C.C.

At the recent general meeting it was unanimously decided to affiliate to the A.C.U. The membership is steadily increasing.

Dudley and District M.C.C.

The paperchase proved a great success, thirty-five miles being covered before the hare, Mr. Harper, on a 12-18 h.p. Riley, was caught by Mr. J. W. Richards, on a 7 h.p. Matchless.

Doncaster and District M.C.C.

For the speed-judging competition next Saturday the course will be from headquarters to near Worksop Crossing *vid* Tick-hill, a distance of sixteen miles. Entries should reach the trials hon. sec., Mr. T. H. W. Dew, 18, King's Road, Doncaster, by to-morrow (Friday).

Cambridgeshire M.C.C.

A reliability trial was run off on Thursday, 27th ult., the route being Royston, Baldock, Hitchin, Luton, Bedford, and St. Neots, and included Offley Hill. Distance, eighty-seven miles. There were nine starters, and the awards were:

1. C. W. Wilson (3½ h.p. P. and M.).
2. S. Butteau (3½ h.p. Premier).
3. H. S. Wallis (3½ h.p. Bradbury).

The first and second prizes, consisting of Kempshall tyres, were presented by the Kempshall Tyre Co., and the third prize by the club.

Ayr and District M.C.

The first competition of the year took place on the 1st inst. at Benguhat Hill, near Dalmellington, the event being a flexibility hill-climb. The day was stormy with showers at intervals. Among the new models were noted a Rudge-Whitworth, ridden by Jas. Senior; 1911 Triumphs, by Jas. Gilchrist and A. Ellis, Chryston; a Douglas, by W. Munro; T.T. Singer, by T. L. Rankine, Chryston, the latter making fastest time and creating a most favourable impression. The formula used was $\frac{S-F}{F+S}$, and the results are as follows:

Single-cylinder Class.

Name and machine.	Fastest.	Slowest.	Gear used.	Fig. of merit.
Jas. Gilchrist (3½ Triumph) ...	42.2s.	121.6s.	5 to 1	.48
T. L. Rankine (3½ T.T. Singer)	37.2s.	100s.	4¾ to 1	.45
M. Brown (3½ Rex)	50.2s.	121s.	5 to 1	.41
Twins.				
Alf. Sommerville (5 h.p. Rex) ...	67.8s.	187s.	10 to 1	.46
Geo. Cocker (5 h.p. Rex) ...	40.8s.	98.2s.	4¾ to 1	.42

Members of the Cambridgeshire Motor Cycle Club assembled for a recent club run.

PROGRESS IN THE MIDLANDS.

Ivy-Precision Model.

We have had the pleasure of inspecting a new single-cylinder 4¼ h.p. sidecar model, which under the name of Ivy-Precision, is being produced by S. A. Newman, of Lichfield Road, Aston. The machine is on standard lines, but contains some very excellent and original points. Foremost amongst these is the new spring fork, which appears to be most effective as a shock absorber. Its

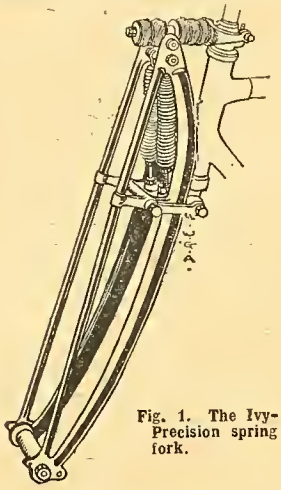


Fig. 1. The Ivy-Precision spring fork.

general appearance is shown in the sketch fig. 1, from which it will be seen that it combines a backward and forward motion similar to that which is effected by the Triumph fork, together with the upward and downward movement characteristic of forks of the Druid type. To gain the second effect the fork is attached to the crown head with the usual links and diagonal tension springs, but the upper link, instead of being of fixed length, incorporates a cushioning device. This consists of a series of circular rubber pads between which steel plates are interposed in order to pre-

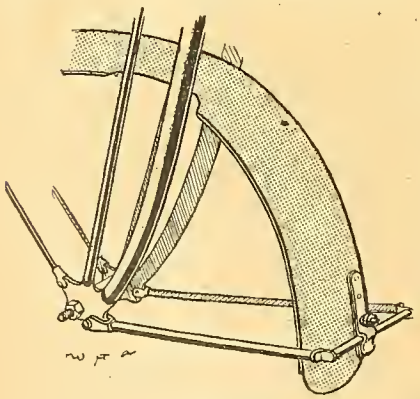


Fig. 2. A neat front stand and mudguard stay.

vent them bulging too much when submitted to a sudden shock. The top part of the fork carries a crosshead which works between these rubber rings on a spindle which forms the link. This latter is attached to the steering head by means of a forked extension. We understand that the behaviour of this fork on the road has given the greatest satisfaction under the most stringent tests, and that it leaves nothing to be desired as far as steadiness in steering is concerned.

The next noteworthy point is the wise provision of a front wheel stand, which, however, is of such neatness and simplicity that when it is in its normal position, *i.e.*, forming the rear stay to the mudguard, it is practically unnoticeable. Fig. 2 shows how it is fitted up and also the clamping fixture. The spring catch is of the accepted type, but an improvement has been introduced in the form of a self-locking washer to the thumbscrew which entirely prevents the latter coming undone through vibration.

We noticed that Chater Lea sidecar attachments were built into the framework of the machine, the engine of which is a 4¼ h.p. 600 c.c. Precision. The cradle lugs for this are of special design, and a special aluminium silencer with cut-out is fitted. The footboards are aluminium rubber-covered. A Harris two-speed gear and free engine clutch is incorporated in the back hub, the control for this being by rocking pedal levers, whilst a starting handle is fitted to the offside back stay and drives the belt rim portion of the gear through a chain. Altogether the 4¼ h.p. Ivy-Precision is a most up-to-date mount which should be capable of taking a sidecar almost anywhere.

A Neat Valve Grinder.

The County Chemical Co., of Bradford Street, Birmingham, have recently put upon the market a clever and effective

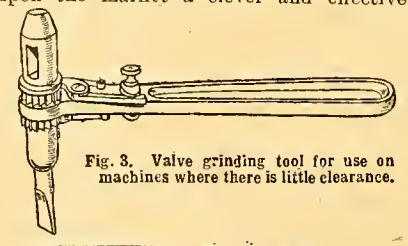


Fig. 3. Valve grinding tool for use on machines where there is little clearance.

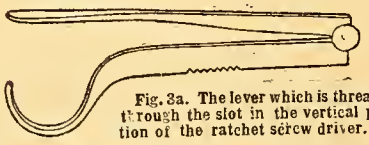


Fig. 3a. The lever which is threaded through the slot in the vertical portion of the ratchet screw driver.

valve grinding tool which will facilitate this operation on the standard type of machine, in which there is none too much room between the cylinder head and the tank. This device is shown in figs. 3 and 3a, and consists of practically a ratchet screwdriver with a right-angled handle. The upper and fixed part of the vertical member has a slot cut in it through which passes a lever having one end crooked so as to clip on to the lower tank tube, whilst the other end is pressed down by the hand so as to give the necessary pressure on the valve. By means of the double ratchet gear and the cam motion, which throws one ratchet out of gear and so allows the direction of rotation to be alternated, the valve can be ground in the correct manner, whilst the tool can no doubt easily be adapted to serve other purposes than mere valve grinding.

Another excellent thing introduced lately by this firm is the series of "Stiff-back" patches, one of which is sketched in fig. 4. The consists of a ordinary pure rubber - face patch laid down on a piece of stiff cardboard which holds the patch stiff and prevents it curling up. When the patch has been stuck on the tyre in the usual way the cardboard back is pulled off.

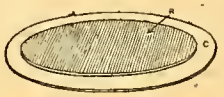


Fig. 4. A Stiff-back patch.

Improvements to the P.M.C. Motette.

We have already described the motorette three-wheeled Sociable made by the Premier Motor Co., of Aston Road, Birmingham. Some changes have recently been made in its construction the principal one being the provision

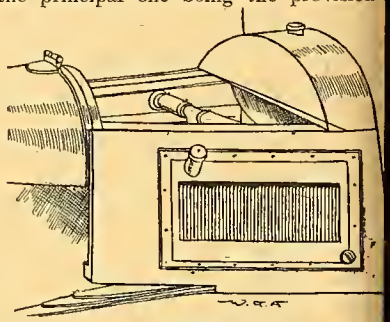


Fig. 5. Arrangement of radiators and tank on the P.M.C. Motette.

a water-cooled four-stroke engine in place of the original two-stroke. The has a single cylinder, the bore of which is 94 mm. and the stroke 110 mm. The radiators are very neatly arranged at the side of the "bonnet," somewhat after the manner of those on the Renault cars, and consist of a series of oblique flat tubes, through which the water circulation is maintained on the thermo-syphon principle, a strong draught being induced through them not only by the vehicle's motion, but also by the double flywheel of the motor, which acts as a fan. The radiators are shown in fig. 5, whilst fig. 6 illustrates a neat glass screen capable of being locked at any angle, which is now being fitted to the inclined dashboard of the vehicle.

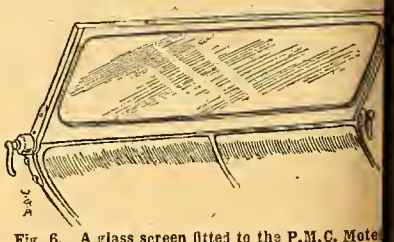


Fig. 6. A glass screen fitted to the P.M.C. Motette.

The Sphinx Manufacturing Co., Bradford Street, Birmingham, has in hand a clever mechanical lubricator which is capable of being fitted to any standard motor cycle engine, and which entirely obviates the use of the pump. At present it is undergoing stringent tests, which so far have gone to show its thorough effectiveness.

THE MOTOR CYCLE

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Experiences in Far-off Lands.

WE devote a considerable amount of space in this issue to a selection of letters received from our readers in far-off lands. The opinions expressed and experiences narrated are of interest to motor cyclists at home abroad. British readers will like to hear of the ilties their brethren have to contend with in remote cts, whilst, say, the New Zealander will have an rtunity of exchanging opinions with his *confrères* in n Africa and *vice versâ*. The intense enthusiasm he pastime, and the manner in which it has ded to all parts of the world where it is possible e a motor cycle, is little less than astounding.

rprise will be felt in the perusal of one correlent's views. Hitherto it has been generally con- l that a special model was desirable for ial needs, but this correspondent, who hails from Zealand, considers the standard pattern quite fills ill. Whilst this may be quite correct in his case, dvisable to point out that the requirements of one ry are no real guide to the necessities of er. Roads in some parts of our Empire are but in others motor cycling consists of striking s open plains or riding on native footpaths. A r bicycle in such cases requires to be specially ructed to enable the engine crank case to miss lers and other obstructions or it would soon be *de combat*, with a hole through the crank case damaged magneto if the latter were fitted low To overcome these drawbacks to indulgence in astime abroad, and to render the motor cycle of er utility to riders who have to contend with such ilties, special models have been introduced, and will continue to be in demand.

Variable gears appear to be almost a necessity in the newer lands, judging by the interest displayed in this question by most of our overseas correspondents. The exclusion of dust from the engine is also a problem which worries the dominion rider a good deal; dust as we know it is bad enough, but in some parts of Australia it is infinitely worse, and any device for preventing the ingress of road particles would be greatly welcomed. Gauze-covered intakes obviate it to some extent, but they only afford partial relief. Complaints respecting the supply of spare parts are among the grumbles from one quarter of the globe. This is a hardy annual and one which will hardly ever be satisfactorily dealt with until motor cycles are as stereotyped as sewing machines or some other piece of domestic machinery which seldom changes in design. Dealers in countries where the demand for spare parts is limited can hardly be blamed if they do not stock a large supply of sundries when the design changes every year, for fear they might be found at the end of twelve months with an expensive assortment in store and no means of disposing of them.

A suggestion to overcome this difficulty is for every maker who caters for imperial business to include with every machine exported duplicates of each part which would be likely to go wrong or require replacement, and make a fixed inclusive charge for them, the figure to be as low as possible in view of the fact that they might never be required. The increased business which would probably ensue would compensate for any little loss of initial profits. Any rider using a motor cycle in a district where spares are unobtainable could not afterwards blame the makers of his machine if he failed to avail himself of the arrangement made for his benefit.

B.A.R.C. THIRD 1911 MEETING.

TWO HANDICAP RACES.

THE third meeting of the Brooklands Automobile Racing Club took place on Wednesday, the 10th inst., in glorious weather. The attendance was fairly good, considering the fact that the meeting was held in the middle of the week. Both motor cycle races were well supported, as for the first there were 36 entries and for the second 33.

The first motor cycle event was the second item on the programme, and was known as the Short Motor Cycle Race (a handicap); distance about 5¾ miles. (The entrant of the winner to receive £10 or cup at option, the entrant of the second £5 or cup at option, and the entrant of the third £3 or cup at option.)

Viewed from the fork, the long procession of motor bicycles from the paddock to the starting place was quite an imposing sight. C. R. Collier, always particular about the appearance of his mount, was riding a smart machine enamelled red. Bolton and Martin, and after these Wilberforce, were the first away. Several machines were notably slow at picking up speed at the start. Godfrey, on his powerful Indian, got away in splendid form, but Collier's engine, probably owing to a high gear, was somewhat sluggish. The competitors had to pass the fork once and then enter the straight.

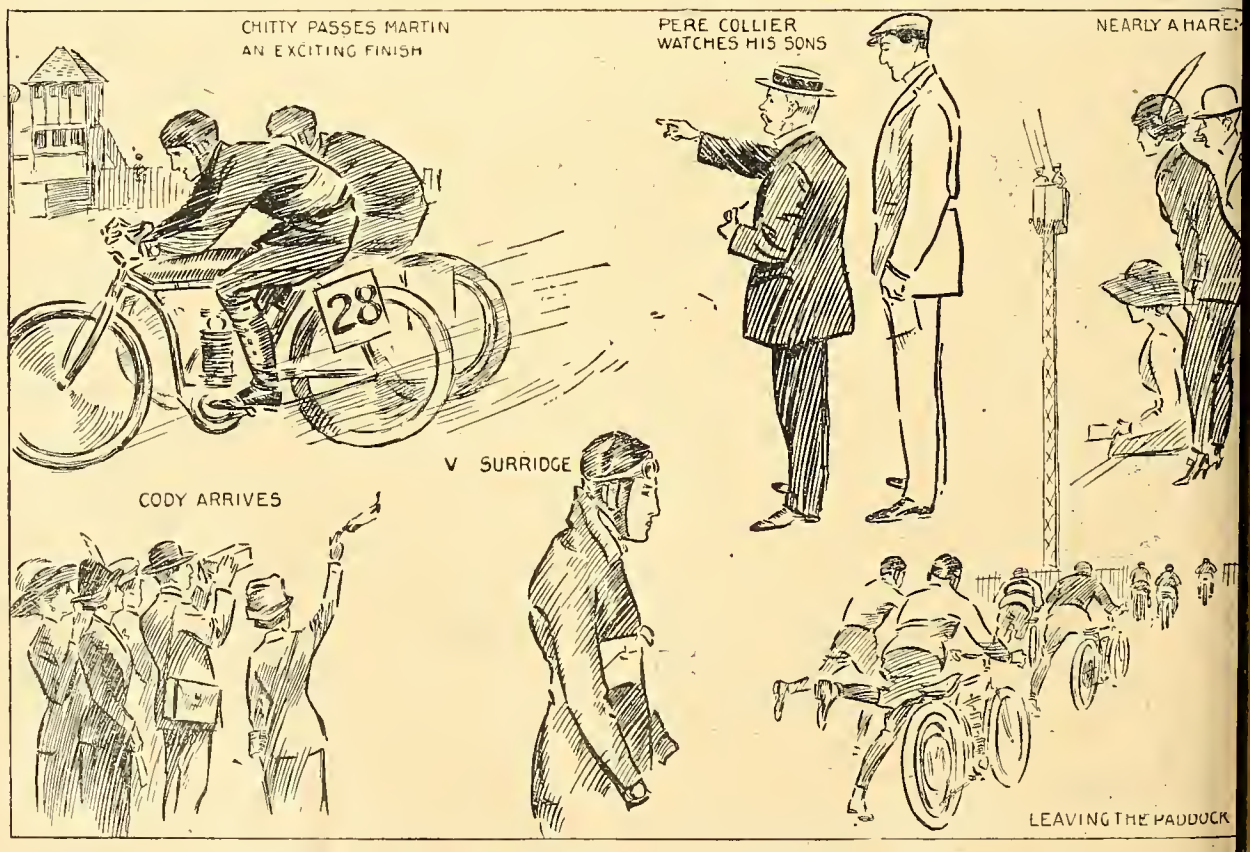
The Short Distance Race.

At the end of the first lap Martin led the throng by half a mile, then followed Dr. Gaskell, Wilberforce, Bolton, Haswell, Harkness, Ware, Birch, Powell, Weatherilt, Baker-White, and Shanks close together, Gordon Bell, Surridge, Stewart, Stanley, Partridge, Shaw, Reed, Tessier, Johnson, Moorhouse (who lapped Chitty), H. A. Collier, Godfrey (who was passing Powell), Collier (missing fire), and Luce. The finish was somewhat of a procession, and Martin led by half a kilometre. Result:

ORDER OF PASSING THE FINISHING POST.

Rider, cylinder, and machine.	Dimensions.	c.c.	Sta M.
1. H. Martin (1-cyl. Martin)	76 × 59.5	270	2
2. Dr. Gaskell (1 Triumph) ...	85 × 88	499	1
3. V. J. Surridge (1 Rudge) ...	85 × 88	499	0
4. H. D. Shaw (2 Indian) ...	82.5 × 93	994	0
5. A. B. White (1 Trump-Jap)	85.5 × 85	488	1
6. P. Y. Harkness (1 Triumph)	85 × 88	499	1
7. F. P. Johnson (2 Matchless)	85 × 58	658	0
8. J. R. Haswell (1 Triumph)	85 × 88	499	1
9. O. C. Godfrey (2 Indian)	82.5 × 93	994	0
10. G. E. Stanley (1 Singer)...	85 × 88	499	0
11. V. Wilberforce (1 N.L.G.)	76 × 65.5	297	1
12. A. Moorhouse (2 Indian) ...	82½ × 93	994	0
13. H. A. Collier (2 Matchless)	76 × 64	580	0
14. C. G. Bell (1 Norton) ...	79 × 100	490	1
15. E. B. Ware (1 Norton) ...	79 × 100	490	1
16. H. Reed (2 Dot)	85 × 58	658	0
17. P. Weatherilt (1 Zenith)	85.5 × 85	488	1
18. S. T. Tessier (2 Bat) ...	76 × 64	580	0
19. J. G. Birch (1 Triumph)...	85 × 88	499	1
20. R. N. Stewart (1 Trump-Jap)	85.5 × 85	488	1
21. H. Shanks, jun. (1 Kingfisher)	85 × 60	340	1
22. H. S. Powell (2 Indian)...	82.5 × 83	994	0
23. C. R. Collier (2 Matchless)	85.5 × 85	976	0
24. H. J. Partridge (2 N.S.U.)	52 × 74	314	1
25. D. C. Bolton (2 Forward)...	56 × 70	344	2
26. A. J. Luce (2 Bat) ...	85 × 65	740	0

A. R. Abbott (Bradbury) suffered belt trouble, and W a broken petrol pipe. Martin's speed was 53 miles an ho and his lap was covered at the rate of 56.55 miles an ho which is a wonderful performance for so small an engi Barnes, the well-known Zenith exponent, was limping consolately round the paddock as a result of a recent collis



Incidents of Last Week's Third 1911 Brooklands Meeting.

C. Third 1911 Meeting.—

a car driven by a Frenchman who was travelling on ong side of the road.

The Long Motor Cycle Handicap.

next motor cycle event was the Long Motor Cycle Distance about 8½ miles. A handicap. (The entrant winner to receive £10 or cup at option, the entrant second £5 or cup at option, the entrant of the third cup at option.) At the start Stanley got away well, ing from the offside of his machine, while C. R. Collier eed made excellent starts. Godfrey rode for the first rds with only one cylinder firing.

First Lap.

order on the completion of the first lap was Bolton was well ahead), Haswell, Bell, Dr. Gaskell, Chitty, ess, Meeten, Baker-White, Stewart, Abbott (missing Surridge, Stanley, Reed, Johnson, Tessier, Shaw, H. lier, Moorhouse, Powell, C. R. Collier (missing fire), dfrey.

Second Lap.

order at the end of the next lap was Dr. Gaskell, Haswell, Meeten, Baker-White, Surridge, Bell, t, Bolton, Shaw, Harkness, Johnson, Stanley, H. A. Reed, Tessier, Moorhouse, Powell, Godfrey, and C. R. Martin's number was illegible, which accounts for being mentioned in the above lists.

e was an exciting finish between Chitty, Martin, Has- nd Shaw. Result :

Rider, cylinder, and machine.	Dimensions.	c.c.	Start. M. S.
1. W. Chitty (Frays)	85 × 60	340	2 24
2. H. Martin (1 Martin) ...	85.5 × 60	344	2 15
3. J. R. Haswell (1 Triumph) ...	85 × 88	499	2 24
4. H. D. Shaw (2 Indian) ...	82.5 × 93	994	0 36
5. A. B. White (1 Trump-Jap)	85.5 × 85	488	2 6
6. H. A. Collier (2 Matchless)	76 × 64	580	0 45
7. A. Moorhouse (2 Indian) ...	82.5 × 93	994	0 36
8. O. C. Godfrey (2 Indian) ...	82.5 × 93	994	0 0
9. R. N. Stewart (1 Trump-Jap)	85.5 × 85	488	2 15
10. P. V. Harkness (1 Triumph)	85 × 88	499	2 24
11. H. Reed (2 Dot)	85 × 58	658	1 3
12. C. G. Bell (1 Norton) ...	79 × 100	490	2 33
13. G. E. Stanley (1 Singer) ...	85 × 88	499	1 27
14. C. R. Collier (2 Matchless)	85.5 × 85	976	0 0
15. H. S. Powell (2 Indian) ...	82.5 × 93	994	0 48
16. S. T. Tessier (2 Bat) ...	76 × 64	580	1 3
17. F. P. Johnson (2 Matchless)	85 × 58	658	1 3
18. D. C. Bolton (2 Forward) ..	56 × 70	344	3 21

Shanks retired at the completion of the third lap, while Abbott, whose engine had a bad knock, did likewise. Surridge was put out of the running by a leaky oil tank, which caused the oil to drip on to and short circuit his sparking plug. The winner's speed was 57 miles an hour. Meeten's machine was fitted with a P. and M. two-speed gear, and Reed used chain transmission. A dramatic conclusion to the meeting was the arrival of S. F. Cody by aeroplane from Aldershot. He appeared at what was said to have been an altitude of 4,000 feet, and landed after a beautifully judged *vol plané*. He was most enthusiastically received.

The procession of competitors from the paddock to the fork for the start of the Short motor cycle race.

U. BROOKLANDS RACE MEETING.

day, June 10th, is the date of the A.C.U. international eeting, to be held at Brooklands. The following are nts that will be run off :

	For machines not exceeding
e lap open, scratch	345 c.c.
ur laps open, scratch	1,000 c.c.
e lap open, passenger	1,000 c.c.
o hour open, scratch	585 c.c.
ternational open, kilometre race ...	1,000 c.c.

.C. JARROTT CUP COMPETITION.

he last M.C.C. committee meeting it was decided to the following additional silver medals for the Land's Easter run, the riders having completed the double within maximum time: C. S. Burney (3½ h.p.), P. Grout (2¾ h.p. Douglas), J. W. Woodhouse (2½ h.p. New Hudson), and A. J. Stevens (2½ h.p. A.J.S.)

A large number of new members were elected, these latter wishing to qualify for the London-Edinburgh run, an event which promises to create another record.

BIRMINGHAM TO LAND'S END.

Entries for the Land's End and back competition for the Lycett Trophy, promoted by the Birmingham M.C.C., finally close on the 20th inst. Twenty-five entries have been sent in, and among them are several prominent riders, such as J. L. Norton, P. Brewster, S. C. Perryman, Rem Fowler, H. C. Cox, R. W. Duke, A. D. Arter, etc. The heavyweight schedule is worked out to average 20 m.p.h., and the passenger machines and lightweights 19 m.p.h. The timed checks will be at Bridgwater, Land's End, and Penzance on the outward, and at Bridgwater and Birmingham on the homeward run. Mr. Edward Lycett, the donor of the trophy, will accompany the riders and act as judge and timekeeper.

Hats Off to Mr. Catt!

Hearty congratulations to A. E. Catt on setting up a new six days' record which will very probably stand for all time—unless indeed we get special motor roads without a legal limit, and in spite of alleged physical deterioration we manage to breed a Jehu who can sit a motor bicycle for a whole week without sleep while it is travelling at a high rate of speed. Even then I should be quite prepared to see this undaunted rider turn out in about his 70th year and set up a new record, his long grey beard waving merrily behind him.

I do not personally consider that his record has taught us anything we did not know before about the motor bicycle. I have watched many modern machines complete several thousand miles straight out of the factory without trouble in the hands of raw novices, and any sensible motor cyclist was already aware that a good 3½ h.p. could manage 2,500 miles without serious trouble or serious attention.

But apart from this, Mr. Catt has first ot all scored a great personal triumph, and shown us that he can remain in the saddle world without end, so to speak.

Secondly, he has compressed the expert's knowledge of the powers of a modern motor cycle into tabloid form, and dished it up for public consumption. If we knew a motor cycle could do 2,500 miles off its head, the general public were not so well instructed, and Mr. Catt has exposed the folly of their incredulity.

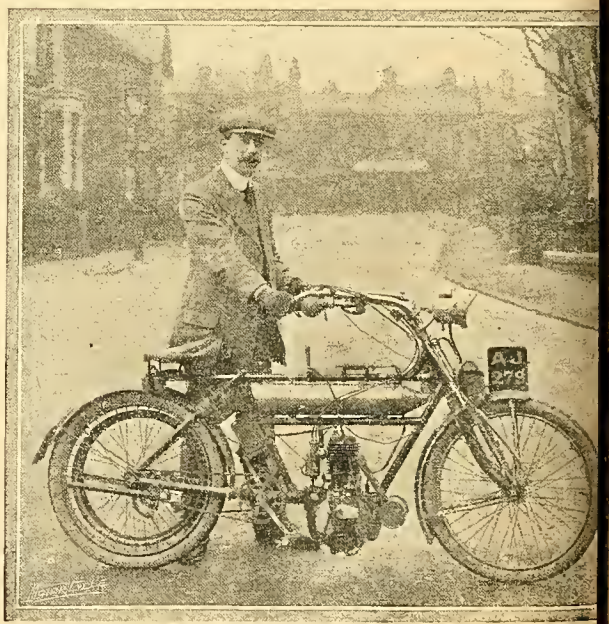
Thirdly, he must have silenced those wiseacres who said motor cycling was bad from a health point of view. He rode a colossal distance in 144 hours—in fact, if he had adhered to strictly legal speeds he would have been in the saddle 127 odd hours, leaving only seventeen hours for six nights' sleep and a score or so of meals. In spite of this prolonged and acute strain, he finished in very creditable physical condition. His eyes, of course, were inflamed by dust and wind and the sustained strain, but otherwise there was not much amiss with him.

Hence we must all congratulate Mr. Catt on his personal triumph, and thank him for advertising the reliability and the hygiene of the modern machine so convincingly. I must, however, add a word of warning. Envious of his fame, a crop of rash aspirants may consider attempts to smash his figures. Probably not half a dozen riders in the kingdom can do so with any tangible hopes. Mr. Catt lives on his machine all the year round in the course of his business, and consequently is always in training for feats of this sort.

Even if other men possess similar training, they should remember that the nervous strain of such an undertaking is colossal. The tame doctor of our staff asserts that for most men such a race would spell chronic insomnia, and might even shorten the term of life by ten years. For a comparatively untrained youth to assail the record in the buoyancy of juvenile enthusiasm would be the height of folly.

A Feature of this Year's Hill-climbs.

I have often been accused of harbouring no frie feelings towards the genus lightweight, and, co quently, I am especially gratified to notice admirably the small engines are behaving at the o ing hill-climbs. The genuine lightweight—the 2 eighty pounder—still finds our test hills a t outside its compass; it can conk up somehow or o in many instances without pedal assistance, or up fairly creditably with the aid of a high r pedalling gear, and a bulbous-calfed gentleman the saddle, his heart doing 2,000 b.p.m. at summit. More we cannot expect as yet. But variably-geared medium weights—the 120-140 lb. with a 2½ h.p. or 3 h.p. engine and a two or th speed gear—are absolute masters of the worst under any conditions, and romp up at very credit speeds indeed when they have been carefully rea by their masters, while in less skilful hands with impaired compression they climb as surely if swiftly. These improved hill-climbing powers evident in every department of motor cycling, an cannot be long before they brim over and endue genuine 80 lbs. lightweight with new glories. I th we may specially hope for great things from the enlargements of the pedal cycle multi-speed h and we must not forget that the smaller the engine more gears it needs, so that three speeds are tinctly better than two where a 1½-2 h.p. engin concerned.



J. W. F. Tranmer, of Scarborough, and his 3½ h.p. J.A.P. Mr. Tranmer the ex-president of the Northern League, besides which he has taken an acti interest in the welfare of his local club. He also owns a 1911 Triumph.

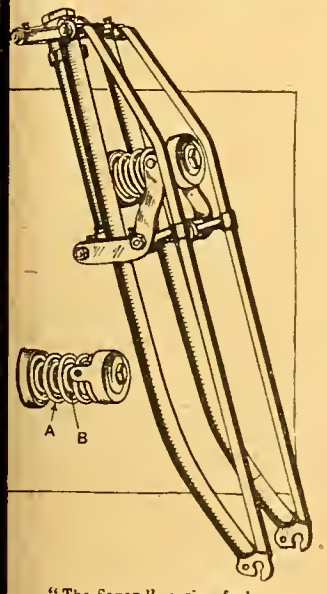
Round the Coast of England, Scotland, and Wales.

ALL the arrangements for Mr. F. Dover's coast ride are now complete. His object is not speed, but further to demonstrate the reliability a motor cycle and its adaptation to the requirements men who have passed the racing age. Mr. Dover forty-seven, and a member of the Sheffield and allamshire M.C.C. In a letter to us he says that he pects to cover 200 miles per day until the whole of e coast ride—4,500 miles—is completed, and has pes of covering the distance with ordinary running adjustments. As previously mentioned, his mount will be a 3½ h.p. 1911 Premier without pedals, Clincher rubber-studded tyres, and Lyso belt. His intention at present is to leave Liverpool on Whit-Monday next. Below will be found a synopsis of the route, and Mr. Dover would be glad of the names of any motor cyclists who would be willing to pilot him through towns. Offers of assistance should be addressed to Mr. F. Dover, London Road, Sheffield, who will telegraph, the day before, the time of his arrival.

verpool	Stranraer	Fraserburgh	Bridlington	Dover	Chepstow
uthport	Girvan	Peterhead	Hull	Folkestone	Newport
eston	Ayr	Aberdeen	Grimsby	Hastings	Cardiff
ackpool	Irvine	Stonehaven	Skegness	Eastbourne	Swansea
etwood	Greenock	Montrose	Boston	Brighton	Pembroke
ncaster	Inveraray	Dundee	King's Lynn	Portsmouth	Cardigan
ange	Oban	Kirkcaldy	Yarmouth	Southampton	Aberystwyth
rrow	Invergarry	Edinburgh	Ipswich	Bournemouth	Barmouth
llom	Cape Wrath	Dunbar	Colchester	Weymouth	Carnarvon
hitehaven	Durness	Berwick	Southend	Exeter	Bangor
rkington	Thurso	Alnwick	Tilbury	Torquay	Holyhead
ryport	Wick	Morpeth	Gravesend	Plymouth	Llandudno
loth	Tain	North Shields	Chatham	Truro	Rhyl
rlisle	Dingwall	Sunderland	Herne Bay	Penzance	Flint
nan	Inverness	Middlesbrough	Margate	Barnstaple	Birkenhead
mfries	Nairn	Whitby	Ramsgate	Bristol	Chester
rkcudbright	Banff	Scarborough	Deal	Lydney	Liverpool

A NEW SPRING FORK.

A FEW days ago we received a call from Mr. S. R. Ridgway, Coventry Road, Birmingham. Mr. Ridgway is the patentee of the Saxon ring fork, which was fitted to a motor bicycle of ll-known make, and which he submitted to us for short trial run. Naturally, we selected some lanes ich rejoice in particularly rough surfaces, and re pleased to find that the fork rendered the achine quite comfortable. The device, of course, d not prevent some jolting, but it was quite equal to spring forks of similar construction fitted to machines which we have previously ridden. The accompanying drawing is practically self-explanatory as far as the general construction is concerned, but one item should be mentioned which may escape attention, and that is the arrangement of the springs. The large spring A is in compression and held between the two metal cups, the rear one of which is brazed to the fork, and the front one is on a pivot, which enables it to accommodate elf to the motion of the fork without placing any due strain on the spring. Another coil spring B is fitted outside the large one. This is anchored at each end, so that when the compression spring has a tendency to expand suddenly the inner coil is put in tension and acts as a check, preventing too great play of the larger spring. Arrangements have been made for employing a rim brake by attaching the horse-shoe to an eye on the top of the girder. For those who prefer a different form of brake, Mr. Ridgway is making a special hub with internal expanding band brake which will be worked by a Bowden lever on the handle-bar. Both articles will be on the market very shortly.



"The Saxon" spring fork.

A SMART SIDECAR COMBINATION.

P. Robson, of Newcastle-on-Tyne, and his twin-cylinder N.S U. and sidecar. The wind screen fitted to the latter will be noted.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Over-oiling. Position of Spark Lever.

Q. (1.) My 3½ h.p. 1910 machine often smokes when I lift the valve. Does this signify too much oil? If I run on a level road for more than a mile, should the valve be sometimes lifted to cool engine, or does this plan damage the engine on picking up speed? (2.) How far should the valve lifter raise valve? (3.) Should steep hills be taken with spark slightly retarded?—SMOKE.

(1.) No, it does not necessarily mean that you are giving too much oil, though you are lubricating slightly on the generous side, which is a good fault. It is a peculiarity of some engines to smoke when the valve lifter is raised. There is no need whatever to raise the exhaust valve when travelling on the level. The engine will not overheat on the level if in proper running order. (2.) The lifter should raise the valve about 3-16in., sufficiently high to release the compression entirely. (3.) This question cannot be answered definitely, as it depends on the timing adopted on your engine. Some makers time the spark a good deal faster than others. Steep hills should be taken with the spark as far advanced as possible. Should the engine show signs of labouring, the lever should be retarded very gradually.

Adjustments for Slow Running.

Q. My machine is a 1910 5 h.p. twin Rex with overhead m.o.i.v. and a B. and B. carburetter. With the spark fully advanced, throttle cut down, and as much air as the engine will take, I cannot get machine to go slower than 30-35 m.p.h. I may say that machine was a sluggish starter when I first had it, and I had the jet enlarged, since when it starts easily enough. Also I have removed the pipe from inlet pipe to crank chamber, leaving the opening in inlet pipe uncovered, and find it does not affect the running or starting, though it takes less air, of course, than formerly.—D.J.

The trouble seems to be due to incorrect adjustment of the carburetter, and mainly to too much air. If you have not tried the machine with a smaller choke tube it would be a good plan to fit one. Restricting the main air supply would enable the engine to run slower. To drive slowly you must retard the spark slightly, throttle down as much as possible, and close the air altogether. The fact of leaving an extra opening in the inlet pipe will also contribute towards your inability to run slowly. To drive very slowly the engine should only take in air from the bottom of the carburetter.

"Free" Clutches.

Q. Can you suggest a mean preventing the internal fri of my Mabon clutch "free"? Cold or warm, any adjustment of the c the machine will not remain stati unless the brake be firmly app My machine is a very heavy and is at times used with a car and passenger. The clutch n slips when "in." With careful m pulation it takes up the c smoothly. It is most useful on s steep hills that would be just much for the engine with sidecar, needs to be handled with great ca such times. The "export" mod used and is lubricated with Vac "B" oil. I have tried squirti little paraffin in to free the pla this makes it more "free," but it flings oil badly. (1.) Is the defe if it may be so called—common t small plate clutches? (2.) Would i likely to improve matters if l plates were fitted alternately steel? (3.) Or is it a questio suitable lubrication?—N.G.R.

We are inclined to think that lub tion trouble is the cause of the stiff of which you complain. We consider the oil does not get right undern

At the summit of Kop Hill during the Herts. County A.C competition. Bert Yates on a Humber lightweight.

bulley and is causing hard running. would suggest that you undo one of mall counter-sunk screws and inject ntity of cylinder oil, together with le paraffin, while the clutch lever lled into the free position and the ine is tilted a little to the right, so enable the oil to work right through e bearings. If this does not cure stiffness, and the Bowden wire is wrongly adjusted, either the spring strong or there is some mechanical When all is in order the machine l remain quite stationary while the e is running. (1.) No, but some rs adjust the clutches so that the ine requires the brake on to keep ationary. (2.) It will be no im- ment if brass plates are used. rs. Mabon and Co. inform us that have used bronze plates and found they were inclined to slip. (3.) See paragraph.

Spring Fork Attachments and Sidecars.

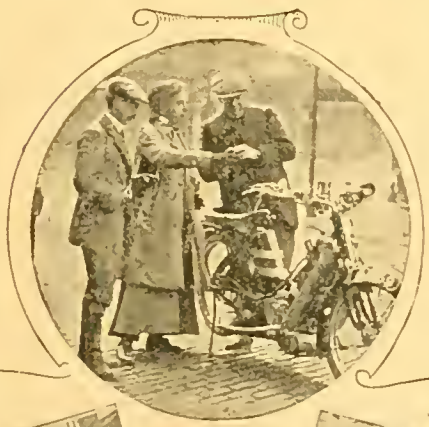
I have a 3½ h.p. N.S.U. fitted with XL'all spring fork attachment. For solo work it is all I desire, but I have just fitted a sidecar, and find that the extra ght on springs on sidecar side throws nt wheel over until it almost touches de of fork, rendering steering diffi- , if not dangerous. As the machine erves very badly, are these attach- nts unsuited for sidecar work, or is it ly to be fitted wrongly?—W.T.T.

we should say that spring fork ments are quite unsuitable for side- ork. It needs a very solidly built-up to withstand the strain of a sidecar. should recommend you to ask the e of the makers on the matter.

Magneto Control.

Can you tell me why makers always put the spark lever on the tank instead of on the handle-bar? I have had mine transferred to the handle-bar, and I am well satisfied h the cost of doing so, but as I ard when riding in town I wish to ow if there is chance of harm in doing s often, for I am fre- ently told that it is wise to bother much h the advance on the gneto.—T.J.P.

Mrs. de Lissa (Motosacoche) making a clean ascent of Kop Hill in the Herts. County A.C. hill-climb on the 6th inst.



We cannot explain why makers are so reluctant to put the magneto control lever on the handle-bar, although it is quite true that the position of the lever seldom requires altering. You cannot do harm by slightly retarding the spark in traffic.

READERS' REPLIES.

Flexible Sidecars.

I read in *The Motor Cycle* of May 4th a reply to "H.P." (page 443) *re* the flexible sidecar, in which you state that "the machine will not stand upright when left alone." I have owned during the last twelve months three Montgomery flexible sidecars, dates 1907, 1908, and 1909, and never found the slightest difficulty in making the machine stand upright by itself. In fact, I have several times sat on the bicycle when the combination was at rest and found not the slightest tendency to fall over, even with a passenger in the sidecar. While on this subject I should like to say that the difficulty in keeping upright is due to half the weight of sidecar and passenger being supported on the left stay of the back wheel. This causes a side strain tending to pull the rider over towards the sidecar. This has to be counteracted by the rider leaning outwards slightly. On a greasy road the front wheel is inclined to slide inwards towards the sidecar on account of the outward lean. The heavier the passenger the more one has to lean outwards. I have driven a flexible sidecar for thousands of miles and have never yet had an accident owing to sideslip, as when the machine does start to skid the sidecar then prevents it falling over. With the sidecar empty the machine is more steady on grease than when riding the bicycle alone. In my opinion, the flexible type is the easier riding for the passenger over rough roads.—H. S. LITTLE.

EXPERIENCES WANTED.

"D.K.St.E." (Glencoe). Address for spare parts of Clément-Garrard engine.

"Inquirer" (Mortlake). Method of carrying Thermos flask or camera attached to motor cycle. The former suspended between handle-bars of a Triumph.

BRADFORD M.C.C. RELIABILITY TRIAL FOR NON-GOLD MEDALLISTS.

(1) Miss Pickles (Scott) receiving instructions from the starter, T. G. Bullus.
(2) At the starting point.
(3) The luncheon stop at Sedbergh.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

A SELECTION OF LETTERS FROM MOTOR CYCLISTS IN FAR-OFF LANDS.

The Motor Cycle in South Africa.

[5604.]—Motor cycles are enjoying quite a boom in South Africa at present, especially here on the Rand, and just so long as the makers at home give us the consideration we deserve as regards rear and fore springing, stout frames and good tyres, so long will the boom continue, but now is the critical time for makers to take advantage of the market.

Before concluding I must express the great pleasure your paper gives us motorists here on the Rand. If you could only see the way in which the newsagents' supply of your paper is taken up you would be surprised.

Wishing your paper every success in the future,

Johannesburg. J. McC.

Riding Conditions in New South Wales.

[5605.]—In remitting to you my subscription fee, let me congratulate you on your splendid little paper. I am a great user of the motor cycle, riding about 800 miles a week average on very bad roads, and I keep going three Triumphs and a 9 h.p. Bat. And what would be motor life up here without your paper? I wish home makers would send machines out here all 2½in. tyres and no butter rims, and that they had a bit of consideration for our backbones in the shape of some rear springing. These are the two most important features up here west. A dustproof carburetter would be useful, as it rains very seldom, and dust is sometimes inches deep. DR. G.

New South Wales.

An Interesting Communication from Jamaica.

[5606.]—The letter No. 5519 of Mr. Clifford Lloyd in the last issue of *The Motor Cycle*, received by me April 6th, must appeal to all in the colonies who are motor cyclists, of whom there are not a few scattered over the world. I am sure experiences such as those of Mr. Lloyd are of as much interest to others as they are to me, and I think more letters of the sort should be written by colonials and those in foreign lands, giving accounts of their joys and tribulations in pursuit of the sport.

Here motor bicycles are few and far between, though this is an almost ideal place for them. The roads are excellently graded, and well laid out, and, for the colonies, are as well maintained as anywhere. Patches of loose macadam are occasionally met with, but there is always a well beaten track to be found where roads are being repaired, made by the bare feet of the pedestrians.

This is not the only advantage to cyclists of the local custom of wearing no boots. I have been singularly fortunate as regards punctures, which I attribute to the care taken to remove thorns, glass, or other puncture-producing objects from the roads and streets. Riding can be indulged in all the year round, and rain is not objected to if preparations are made for it in the rainy seasons, which are fairly regular, and always give plenty of warning before they arrive. Comparatively speaking, mud is almost unknown, the roads, which are built of limestone, being washed clean by the showers. There is no speed limit, but special attention is paid by the police to dangerous or careless driving, which, so far, is not much indulged in by motorists. The licences are 5s. for a driver's licence, and 6s. for a bicycle tax annually, besides which the machine has to be registered, for which 5s. is the fee.

Visitors to the island deposit about one-sixth of the estimated value of the machine, which amount will be refunded when leaving, and they can use their motor cycles for six months without being taxed for duty.

A motor club has just been started, one of the objects which is to take such steps as may be necessary or desirable for the suppression of inconsiderate and reckless driving on the island, and some of the members who own cars are quite willing to take inspectors of constabulary about to demonstrate the shortcomings of drivers of horsed vehicles.

Although we are within four days sail of "The State" where petrol comes from, the price we have to pay is 1s. a gallon. A useful tip for those in tropical countries, which I believe, is not widely known, is to put a dab of solder on the top of the jet, and then make a hole (the size to suit your own taste) with the point of a hot needle. A good saving in petrol is the result, as less spirit and more air is needed in hot weather. If this does not work satisfactorily the solder is easily removed.

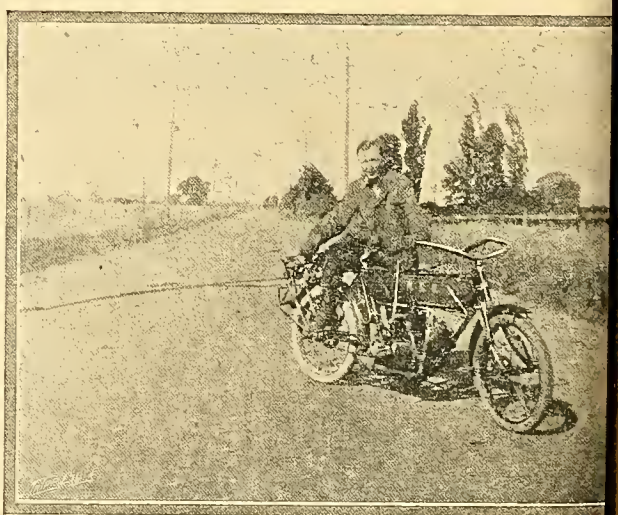
I cannot close this letter without paying a well-deserved tribute to an excellent device which I have recently tried and which I can highly recommend to those living in "the Dominions beyond the Seas" who have to contend with rough roads, and that is the N.A.B. spring pillar. Mr. Lloyd, amongst other things, suggests rear springing as a necessity for comfort, but I can assure him that this splendid little invention entirely fills the want, and, after using it on our fairly smooth roads, it exceeded all my expectations as a shock absorber. I strongly recommend it to my brother colonials.

Your very excellent periodical is much appreciated.

Jamaica, West Indies. KINGSTON.

Oil-treated Roads in California.

[5607.]—The photograph herewith will give some idea that all roads in the States are not so bad as they are painted. The road in the picture stretches for twenty-two miles from Sacramento, the capital of California, to Folsom, a mining town in the foothills. There are over one hundred miles of these oiled macadam roads in this county.



My mount (a N.S.U.) has given me satisfaction for over three years. It is fitted with a spring tandem attachment, and my wife and I have ridden it over 15,000 miles.

Sacramento, U.S.A. H. PEN BOSCH.

A SELECTION OF LETTERS FROM MOTOR CYCLISTS IN FAR-OFF LANDS.

High Clearance for Colonial Roads.

5608.]—As a rider of a motor bicycle in the Transvaal, ish to refute the statement made by E. F. Appleyard ter 5430, March 2nd, 1911], that "high clearance" is to avoided in motor bicycles constructed for colonial use. Mr. Appleyard will pass his hand underneath the crank of his Humber, along the tube under the engine of his an, or below the silencer of any Triumph, I think will feel that "high clearance" is wanted badly.

any a time and oft have I dismounted hurriedly, know- that the crank case and silencer of my machine would not r, or ploughed up the ground on chancing it. The owing is a list of one's chief needs:

Better spring forks.
Variable gears.
Spring frame insulating machine from road shocks.
At least six inches engine clearance.
Dust-proof carburetters.
Stronger rims and larger tyres.

cannot claim the experience of nine machines, but my ion is founded upon the solid basis of wrecked netos and silencers, ruined rims, jarred spine, and worked lungs. In spite, however, of one's likes and kes, fads and fancies, we have much to be thankful for. me was when accumulators expired suddenly, forks were o rigid, tanks came unsoldered, trembler coil didn't ble. Perhaps a time will come when one will find the e pedal under one's foot and not up in the air, and e genius will invent a silencer. VAGARCHA.

ransvaal.

The Motor Cycle in New Zealand.

609.]—It is quite a fallacy to imagine that motor sts in this part of the world require something in the re of a traction engine to negotiate our roads and climb hills. True, we have our bad as well as our good roads, mountains as well as our plains, but, taken as a whole, country (I speak of New Zealand) is just as suitable for motor cycle as is the United Kingdom. In some parts he more recently settled districts it is, of course, im- ible to run motor cycles, or even traps, if it comes to

In such backblock localities our settlers naturally r the horse to the motor cycle. Twelve solid inches of in the winter, and ditto ruts in the dry weather, effectu- settle the question of locomotion in these parts. For rest of the country there are always hundreds of miles air average roads for the touring motor cyclist, whilst he professional or business rider it is safe to say that never any man is so fortunate as to be able to purchase tor cycle, you may be sure he can use it just as efficiently just as comfortably as any similarly placed individual in t Britain. Between all our cities and townships of any rtance at all, the roads are quite rideable, whether by iny Motosacoche or the big twin and sidecar.

, thank you; what we colonials require is not the over- hted, ultra-high and abominably ugly "colonial model" misguided manufacturers are wasting their time and y on. The standard tourist model, exactly as ridden ur British comrades, is all we ask for. Certainly, we more efficient engines (if we can get them), more nable compression ratios, and, above all, decent work- hip, by which I mean a trifle better finish of the anical portion of the machine, as distinct from mere iness on the outside. The only alteration ever required ake a standard British motor cycle as suitable for our try as for England is, in some cases, a slight adjustment e carburetters to suit our atmospheric conditions.

r chief quarrel with British makers is not on account of machines, but with respect to their business methods. agencies for some of England's most famous motor s are often granted to some man of straw, often an ex- try barber, commission agent, or such like, of whom rest of the country knows nothing. It often happens, as d to the writer twelve months ago, that a rider, taking ncy to some particular model he has read about in paper, writes to the maker with an order, perhaps gh a reputable trade channel. Some four or six months he receives a reply saying that the makers cannot tain any orders placed outside their agents at some ard of place where motor cyclists are never seen.

ellington, N.Z. COLONIAL.

A West Australian Rider's Views.

[5610.]—Being a subscriber to *The Motor Cycle*, I have recently noticed the remarks on motor cycles for colonial use. I would like to voice a few opinions through the medium of your paper.

Regarding transmission. My experience with a belt has been fairly satisfactory, but belts are liable to stretch and need attention; they also collect a lot of dirt. The chain is satisfactory, but wears very quickly, and collects dirt if not entirely enclosed, and should the chain break when going at a good speed when enclosed in a gear case, what would happen? I think that the gear drive would satisfy all requirements, especially on muddy roads.

With regard to overheating. Most of the engines that are on the Australian market have been made for English use, and the gearing that they have is too high for some of the Australian roads, which are very sandy, and have a line of low bushes, about 3ft. high, growing along the centre, leaving a narrow path each side for the motor cyclist to ride on. In these places a speed of from five to eight miles an hour cannot be exceeded. When travelling at this slow speed on sandy roads the power is not sufficient to keep the machine going. If one uses a large motor of 8 h.p. the expense of upkeep is generally too great. If one could gear an ordinary machine 12 to 1 the engine would overheat.

Water-cooling has its disadvantages as well as its advantages, and a fracture through a spill might render the machine useless on a road which might be anything from ten to fifty miles from even a house and perhaps one hundred miles from a town.

I think that a fan to cool the engine by forced draught would be satisfactory, so that a low gear of about 12 to 1 could be used in the sand, but this gear would not suit all the time, so a two-speed gear would be required, and I think that until this is done the Australian motorist cannot be really satisfied.

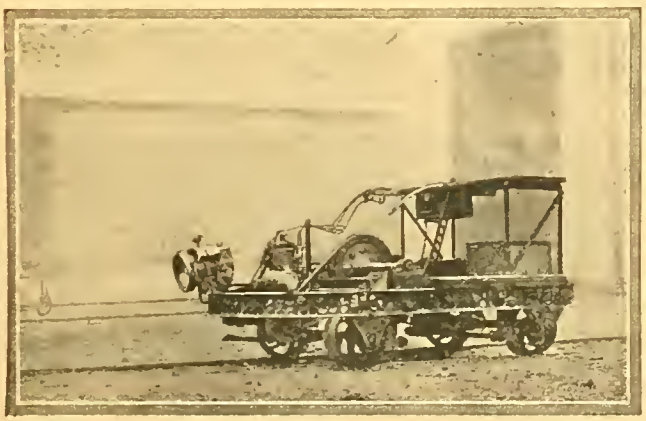
Larger flywheels would be an improvement for slow running. In the sand where it is just possible for the machine to go along it is difficult to steer on the narrow roads, so I think that the castor action would be a big improvement, although I have not tried this device.

West Australia. ERNEST G. MOIR.

An Experience from South America.

[5611.]—I herewith enclose a photograph of a 3½ h.p. 1910 Rex engine, mounted on a narrow gauge railway inspection car. The most interesting thing is that this engine works at an altitude of 14,000 feet above sea level, and develops about 2 h.p. only, due to the air pressure being only 8 lbs. per square inch, and, therefore, the quantity of mixture drawn into the cylinder being only about half that at sea level. Also the compression is about half, due to the small amount of mixture taken in. This engine will propel two persons up a two per cent. grade for about four miles at 20 m.p.h., the car and engine weighing 650 lbs. This engine has always run perfectly on paraffin without any alteration to the carburetter. CARL FOX.

Peru.



A 3½ h.p. Rex motor cycle engine mounted on a trolley.

A SELECTION OF LETTERS FROM MOTOR CYCLISTS IN FAR-OFF LANDS.

A New Zealander's Views.

[5612.]—As an overseas motor cyclist and a reader of your worthy paper, I am pleased to note the strenuous manner in which you are fighting for our interests.

Why manufacturers do not specially cater for the overseas buyer beats me. There is no one who would regret more than I the influx of foreign machines, but such will be the case if British manufacturers do not hustle and secure a firm hold on the colonial trade. Their first enterprise should be the sending out of a capable man to study thoroughly colonial conditions. Roads and country are totally different from those pertaining in the Homeland. The gravel pits, unformed, sandy, heavily mudded, badly graded, creek and water race crossed roads are almost unknown at home. Generally the power supplied is sufficient, but what is badly wanted is a machine weighing somewhere about 130 lbs., two-speed and free engine, sprung frame, a greatly stronger back rim and heavier rear tyre wide in the tread, more petrol-carrying capacity, automatic lubrication—it being frequently dangerous to remove a hand from the handle-bars for a considerable distance—high magneto position, and engine well guarded from dust and mud.

Motor cycling in New Zealand is gaining ground in a surprising manner, and new machines are a scarcity, it being a mere item to have to wait six months for delivery.

It is pleasant to note that winter competitions are becoming popular at home; this will cause manufacturers to look more closely to the protection of the power unit from dust, mud, and water, and consequently be a pleasure to the colonial buyer.

Can any of the British manufacturers establish a manufacturing branch (agencies are of no use) in the colonies? This would greatly help to overcome the difficulty, and in my mind they would find it a rosy paying concern.

Spares—what a job it is to get spares from any makers' agent in this part of the globe.

Westport, N.Z. E. R. ROSKRUGE.

A Vision from West Africa.

[5613.]—Can any of your readers inform me if a two-seated tricar is or has ever been mooted, similar to the P.M.C. Motorette or A.C. sociable, but having back wheel steering and front wheel drive?

I know the Phänomobile, of course, but have in mind something between the two types, plus a "taste" of the two-seater car.

Do you think any of your readers with a bent towards draughtsmanship would be sufficiently interested to design such a machine? I have no gifts that way myself, but of late a "mental picture" has haunted me somewhat as follows: A double width sidecar basket placed with seat about midway between front and back axles, similarly sprung to usual sidecar practice. The foot of basket is "cloven" to allow cylinders to project up between the feet of the two passengers and obtain proper cooling. If one passenger only were in centre of the seat he or she would not be incommoded by the cylinders.

My "vision" has an air-cooled engine of two verti cylinders about 80 × 85 mm., posed fore and aft, and c *monobloc*, to fire alternately, one explosion to each reve tion. An outside flywheel at rear, and a weather-protect worm drive through clutch and two-speed gear box to t front wheels. This might necessitate a differential, but there anything mechanically wrong with a drive on to *one* the wheels *via* a live axle, the other wheel remaining "free

My frame would be brought back and upwards to a cro carrying the fork of the back wheel, adequately sprung some such lines as now employed on front forks.

Steering gear from top of crown to a counter pillar beh basket, and thence from bottom of counter pillar to steer pillar proper, placed between passengers, fitted with eit a wheel or tiller. Petrol tank and luggage would find g accommodation (sprung) behind the basket.

I am sufficiently amateur to realise that there may some detail in this ideal to render it fundamentally impr ticable, but, if not, then I think that there is scope here those very desirable features, cheapness, upkeep econo adequate mudguarding and all-weather capabilities, sociabil and a reduced chance of skidding, for it seems to me t as on water, so on wheels, the natural place for a "rudd is at the back and not the front of a vehicle; moreover *pulling* power should make for more stability on grease t a *pushing* one. J.G.K

West Africa.

An Australian Rider's Criticism of Motor Cycle Design

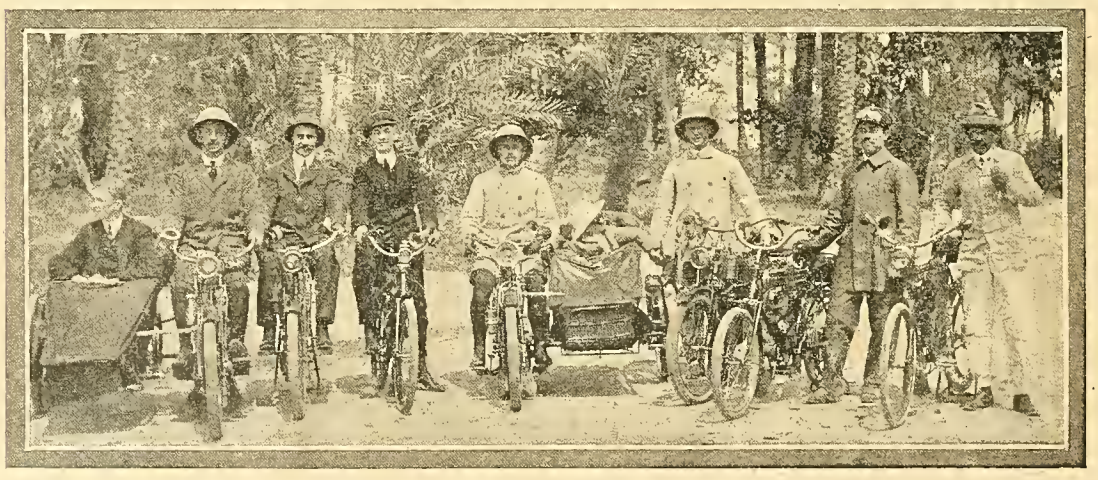
[5614.]—Much is written from time to time about ideal motor cycle for the colonies, and after reviewing correspondence that has appeared in your valued colu from almost every civilised portion of the globe, it is q convincing that the home makers cannot possibly depart f their standard models and build machines such as are desi by your several correspondents. As far as my own partic part of the world is concerned (South Australia) the follow details would be a long way towards an ideal mount:

Power. 3½-4 h.p., low compression, engine more effectu designed for cool running. Out here we have real hills, f three to seven miles continual climb, average grade 1 i with plenty of hair-pin bends, and rough roads at that, say nothing of a temperature of 110° in the shade.

Frame. Heavier than usual—190 lbs. at the least c plete. Lighter machines are almost useless for general t ing, although I am a great advocate for a 2½ h.p. mac weighing about 125 lbs. complete for town riding and s journeys where the roads can be picked, but for all-ro touring conditions, taking our roads into consideration, lbs. weight is quite light enough.

Rims on all imported machines are far too light. I k known dozens of cases on the first trip where rims have b badly dented, and in several instances severely. Hea rims must be fitted and tyres of at least 2½in. diameter, e heavy on the back wheel, and butted tubes are al essential.

Wheelbase should be at least 56in., and spring forks of



A group of r at Alexand Egypt. The countr represented England, It and Germany the machine Motosacoch M.R., Trium four-cyl. F. P. & M. and Montgo sidecars. T years ago t were only motor cyclis Alexandria, there are s teen. (*Photograph sent by Mr. D Allen.*)

Druid or Chater-Lea type are the most efficient, but they should be heavier than usual. Handle-bars, in many instances, are too light, and many breakages have taken place; also the springs in the saddle need to be stronger.

As regards belts, although I am a great believer in leather, rubber is no doubt the most popular, but if riders would only take the trouble to look after their leather belts I am sure they would get twice the mileage out of a leather than a rubber belt. 1in. section should be used, and small stones and dust are plentiful here, and a leather belt should be lightly scraped, and dressed at least once a week.

Mudguards should be at least 4in. wide, and of heavier material. The popular form of stand fastener now so widely used plays havoc with light guards. Automatic oiling on the J.A.P. or Best and Lloyd principle certainly ought to be universal, whilst a little attention paid to the protection of the magneto would be invaluable.

Among other details I should specify: Engine clearance 5in.; stronger lamp brackets, two in number; hook end grips (where inverted levers are not fitted); tanks to hold at least one and threequarter gallons, and to be stronger; larger and stronger tool-bags, pannier fashion on carrier.

A machine with these details, I consider, would meet the case out here besides being a good serviceable mount for the home market. ANTIPODEMOTE.

How to Locate Pinhole Punctures.

[5615.]—In answer to "Ixion's" query my experience of the best way of finding a puncture is to light up a cigarette or pipe, take out the valve of inner tube and blow a mouthful into the tube, then replace valve and pump up; there will appear a black stain around the perforation. I have found this answer very well with cycle and motor cycle tyres. HARRY BEALE.

Ingratitude.

[5616.]—Last Easter Monday I had two motor cyclists in my shop who had the misfortune to burst the cover on one of their machines a few miles outside Leicester. They both came to my place on a 1911 F.E. Triumph without a silencer, and asked me to lend them a 26in. by 2¼in. cover, promising to return same to me when they had fetched their machine.

I lent to them a 26in. by 2¼in. Goodrich studded cover, also gave them some patching rubber to mend the air tube and received no deposit or anything, being only too pleased to help them out of their difficulty. I have not seen or heard a word of them from that day to this. Is this encouraging me to lend again? No doubt others have been served the same. I send you the registration number of the machine, but not for publication. If this should catch the eye of the riders concerned I shall be glad to hear from them through your paper.

Leicester. W. O. GREAVES.

Competitions for Amateurs Only.

[5617.]—I would like to draw the attention of your readers, and more particularly secretaries of clubs, to a paragraph by Mr. Max Pemberton under the heading of "A Motorist's Notebook," in the *Field* of February 25th. Writing of the decline of the sporting side of motoring and the death of the car hill-climb, he says:

"These hill-climbs, unfortunately, were killed by the professionals. Clubs made a great mistake in imagining that the performances of their own members were not sufficient entertainment for the company. The so-called 'open race' attracted smart youths from Coventry, whose personal property for this performance appeared to be a car of 100 h.p. and a cigarette that was but a charred memory. . . . These acrobatic gentlemen dominated the hill-climb and made it their own. They patronised everybody; . . . would set the local secretary running until his collar collapsed upon his neck; were, in short, the height of impudence, if rarely of dignity. Gradually the local man realised the character of the entertainment and withdrew. . . . . The presence of the gang from Coventry destroyed the social side of the meeting. . . . So the hill-climb died. . . . If motor clubs have any *raison d'être* at all, it is surely the fostering of local friendship and of good natured rivalries."

Quite so! And I personally, a keen amateur rider, look round in vain for a club which runs a good sporting programme, without open races, and among whose members there are no semi-professionals.

The trade rider is often a very good fellow, but I, for one, have no desire to meet him when out for a friendly afternoon's competition riding with my fellow clubmen.

If clubs are not careful the motor cycle hill-climb will die the same death as did that of the car.

AMATEUR RIDER.

External Band Brakes.

[5618.]—I am pleased to see that "Ixion" has again raked up that old sore, the external band brake. Why on earth *will* designers persist in keeping to these most unsatisfactory brakes? Last year I drove a 4 h.p. tricar fitted with a pair of the above brakes, and, of course, the inevitable happened, in spite of careful inspection before starting, and I had a bad smash at the foot of Dean Hill, near Salisbury.

I have now a 5 h.p. twin tricar, which has two of the same kind of brakes—one foot-applied, the other by hand lever—and they are useless even to steady the machine, to say nothing of stopping quickly in an emergency. I have sent the machine to two different garages, and they have failed to make the brakes do their work, and I defy any man to make them a permanent success.

Why manufacturers continue to fit them is a mystery to me, and my advice to all readers is, never rely on external band brakes, for they are nearly always a failure, and will surely end in serious trouble, as I know from painful experience.

C. PARKES.

Rejuvenating an Old Machine.

[5619.]—I am enclosing a photograph of my tricar, which has been brought right up to date. I bought it second-hand last year from a man who had been running it for six years. It has a Phelon and Moore 3½ h.p. engine, Humber frame, and Millford fore-carriage.

During the last winter it has been taken to pieces and rebuilt, up to date, by a local firm. The engine is perfection, and reflects great credit on the makers. My Easter

One of the early forecars, now in its seventh year. See letter No. 5619.)

run was Banbury, Oxford, Wallingford, Reading, Hampton Court, Streatham, St. Albans, Dunchurch, Daventry, Coventry, and Birmingham without the slightest trouble. Passenger and self, weight 21 stones, kept our seats the whole of the journey, averaging 18 m.p.h. and 92 miles to the gallon of Shell. I have had h.b.c. fitted to the ignition, and have found it a real blessing for negotiating hills, corners, and traffic. I am able with the P. and M. half-compression, two-speed gear, and h.b.c. to ignition, to go at less than a walking pace. I have retained the battery ignition for easy starting, as I have a great objection to work, but it starts cold at one or two turns of the handle. ERNEST MAYS.

The M.C.C. Members' Hill-climb.

THE officials of the M.C.C. feel a little sore that Kop Hill, Princes Risborough, which they "discovered" last year, has been used by several clubs for hill tests, and the participants in these competitions and several spectators have not exercised that caution and consideration for road users which are so necessary if motor cyclists wish to remain in the good graces of the public. The M.C.C. has its own method of dealing with offenders, and its officials feel that if only other clubs had done their best to suppress inconsiderate driving there would have been no complaints.

When Mr. E. B. Dickson arrived at Princes Risborough on Saturday morning last he was informed that the hill could not be used, as it would be under repair in consequence of the damage done to the road surface by competing machines in the recent competitions. But through the courtesy of Mr. Grant, the surveyor of the Wycombe Rural District Council, permission was obtained on the club agreeing to indemnify the council against damage.

It was a hot and sultry afternoon when at four o'clock the competition began, and thunder echoed round the Chilterns. Mr. F. T. Bidlake took the times at the foot of the hill, and Mr. Harry J. Swindley held the watch at the summit. Class I. was for lightweight motor bicycles not exceeding 340 c.c., pedalling allowed. No single-geared machine made a clean ascent. J. F. Crundall and A. C. Robbins (2 h.p. Humbers) and Eli Clark (2¾ h.p. Douglas) pedalled hard. N. C. Dear (2 h.p. Humber) and A. Webster (2½ h.p. Hobart) dismounted. G. W. England (2¾ h.p. M.R., three-speed), G. L. Fletcher (2¾ h.p. two-speed Douglas), and B. Marians (2½ h.p. two-speed P. and M.) came up in excellent form and without pedalling.

Class I. Formula results:

		mm.	Fig. of merit.
1.	A. C. Robbins, 2 Humber	60×70	16.3
2.	J. F. Crundall, 2 Humber	60×70	15.7
3.	E. Clark, 2¾ Douglas (2-cyl.)	60×60	11.3
4.	B. Marians, 2½ P. and M. (two-speed) ...	67×76	10.7
5.	G. L. Fletcher, 2¾ Douglas (2-cyl.), two-speed	60×60	10.1
6	G. W. England, 2¾ M.R., three-speed ...	50×85	8.7

Class II., for motor cycles with engines not less than 300 c.c. or more than 500 c.c.—All made clean ascents except E. A. Colliver (3½ Zenith), who dismounted at the foot of the last steep section.

Formula results:

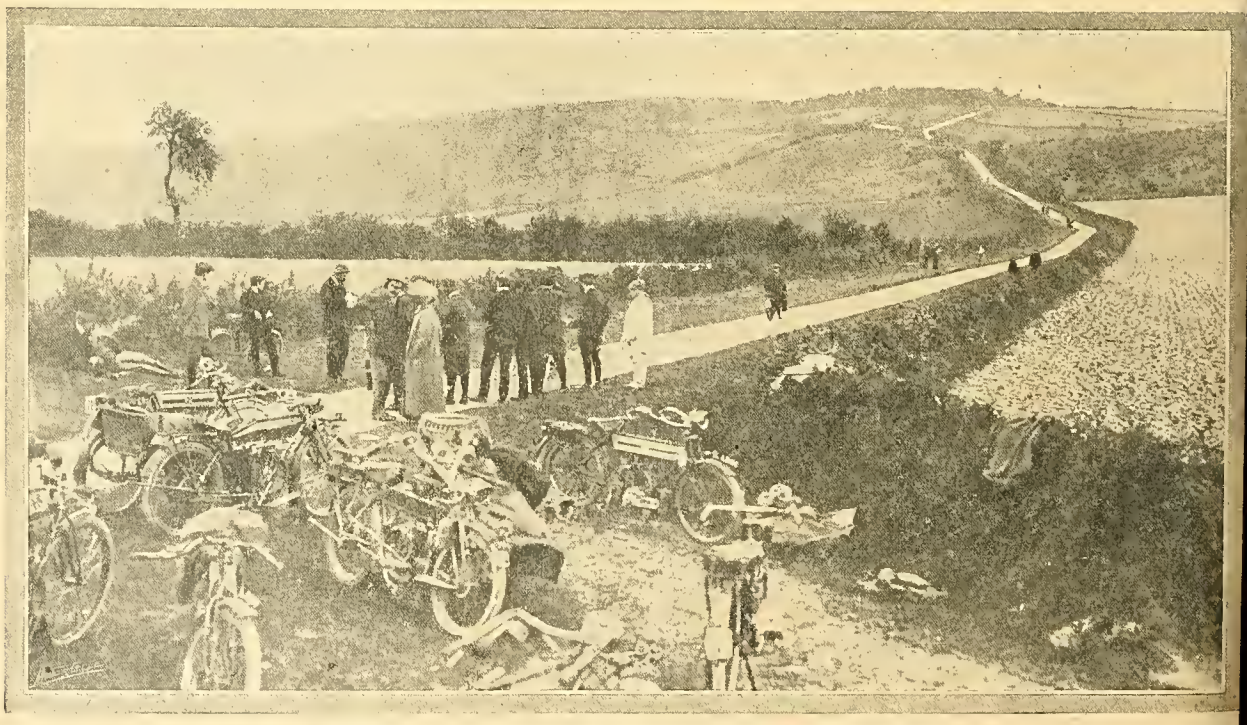
		mm.	Fig. of merit.
1.	J. H. Slaughter, 3½ L.M.C.	85 × 88	16.5
2.	H. Lister Cooper, 3½ Triumph ...	85 × 88	15.0
3.	C. C. Cooke, 3½ Triumph	85 × 88	14.3
4.	E. B. Ware, 3½ Norton	79 ×100	14.0
5.	J. W. Cox, 3½ Triumph	85 × 88	13.6
6.	G. F. Gray, 3½ Rudge	85 × 88	13.4
7.	B. A. Hill, 3½ Rudge	85 × 88	12.7
8.	E. Gwynne, 3½ Triumph	85 × 88	12.6
9.	L. A. Baddeley, 3½ Brown	85 × 85	12.3
10.	W. A. Jacobs, 3½ Rex	84.5× 89	12.2
11.	R. Surridge, 4 Service	85 × 85	12.0

The next event was Class IV., for multi-cylinder motor cycles with engines of over 350, but not exceeding 1,000 c.c. Towards the end of this class it began to rain gently. The two chief features to be observed in this event were the silence of Halsall's Clyno and the speed of Moorhouse's Indian.

Class IV. Formula results:

		mm.	Fig. of merit.
1.	A. J. Moorhouse, 7 Indian	82.5×93	13.9
2.	W. C. Henry, 3 Wanderer	60 ×72	12.4
3.	S. G. Frost, 4½ Minerva	72 ×73	10.9
4.	E. Gwynne, 7 Indian	82.5×93	9.2
5.	A. Mariani, 7 Indian	82.5×93	8.9
6.	O. C. Godfrey, 7 Indian	82.5×93	8.8
7.	C. Percival, 6 Zenith-Gradua	76 ×85	8.2
8.	C. F. Halsall, 5-6 Clyno	76 ×82	7.8

Class III., for single-cylinder motor cycles with engines not exceeding 500 c.c., was run off in a thunderstorm. Fortunately the electrical part of the tempest was at a safe distance but the rain was appalling. For those at the foot of the hill there was little or no shelter, and the wet got through everything. Owing to the severity of the storm the competition was somewhat curtailed. Class V. was not run at all, but



General view at the foot of the hill. G. L. Fletcher (Douglas) is seen starting.

The M.C.C. Members' Hill-climb.—

s this class was to be decided on time and Class IV. was un on formula the times in Class IV. were counted as lass V.

Class III. results:

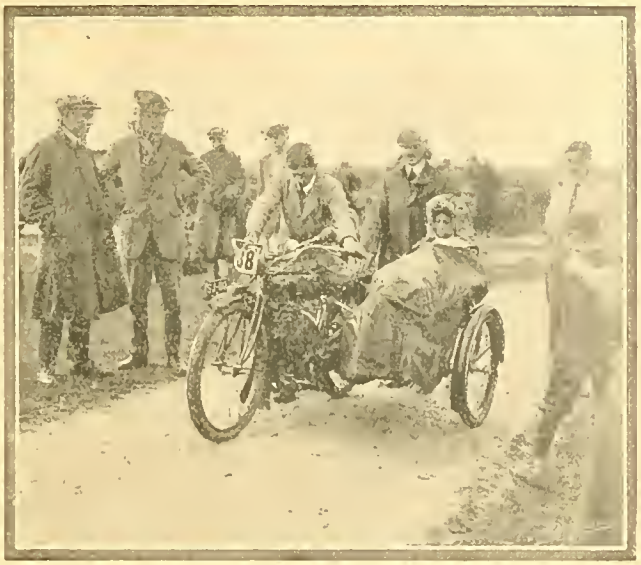
		mm.	Time.
1.	H. Lister Cooper, 3½ Triumph ...	85 × 88	0s.
2.	J. H. Slaughter, 3½ L.M.C.	85 × 88	2⅕s.
3.	C. C. Cooke, 3½ Triumph ...	85 × 88	4s.
4.	L. A. Baddeley, 3½ Brown	86 × 86	5⅖s.
5.	E. A. Colliver, 3½ Zenith-Gradua ...	85.5 × 85	10s.
6.	G. T. Gray, 3½ Rudge	85 × 88	10⅕s.
7.	E. Gwynne, 3½ Triumph	85 × 88	10⅗s.
8.	W. A. Jacobs, 3½ Rex	84.5 × 89	12⅕s.
9.	E. B. Ware, 3½ Norton	79 × 100	13s.
10.	J. W. Cox, 3½ Triumph	85 × 88	16⅘s.

Colliver, it will be noticed, though he failed in Class II., ade a good ascent on this occasion, and was but ten conds slower than the winner.

Class V., for multi-cylinder machines for engines not ceeding 1,000 c.c. Results:

		mm.	Time.
	A. J. Moorhouse, 7 Indian	82.5 × 93	0s.
	E. Gwynne, 7 Indian	82.5 × 93	2⅘s.
	O. C. Godfrey, 7 Indian	82.5 × 93	5⅖s.
	A. Mariani, 7 Indian	82.5 × 93	7s.
	C. F. Halsall, 5-6 Clyno	76 × 82	35s.
	G. L. Fletcher, 2¾ Douglas	60 × 60	46s.

Class VI. was for passenger machines with engines not ceeding 1,000 c.c., which was run off after the rain had opped. The Indian machines again made excellent times. ough Ware, on the Chater-Lea, proved a winner despite e fact that owing to the wet he covered the early portion the course on one cylinder. Wells was using a new car- retter, which was most successful. It consists of the linary Indian carburetter with the annular float and other ll-known characteristics, but it possesses a tiny supple- ntary carburetter with a single jet, leading through a by- ss direct into the inlet pipe and coming into operation en the throttle is closed. The result is that the engine rts easily and just ticks round when running free, a eat advantage when using a sidecar or when riding in ck traffic with friction clutch and change-speed gear in nstant use.



G. Lee Evans (7 h.p. Indian and sidecar) starting in Saturday's M.C.C. members' hill climb at Kop Hill.

Class VI. Results on formula:	mm.	Fig. of Merit.
1. E. B. Ware, 8 Chater-Lea and sc. (2-cyl.)	85 × 88	10.9
2. W. H. Wells, 7 Indian and sc. (2-cyl.)...	82.5 × 93	9.1
3. G. Lee Evans, 7 Indian and sc. (2-cyl.) ...	82.5 × 93	8.6
4. O. C. Godfrey, 7 Indian and sc. (2-cyl.)...	82.5 × 93	7.5

The officials were—judges, Messrs. R. H. Head and J van Hooydonk; chief marshal and starter, C. J. Seed; marshals, Dr. C. Gibbons, Messrs. W. Cooper, F. J. Jenkins, W. E. May, and L. Vedy. The formula employed was

Professor Callender's $\frac{W}{T \times C}$

SHEFFIELD AND HALLAMSHIRE M.C.C. HILL-CLIMB.

S. Blackbourn (3½ h.p. Zenith-Gradua) at speed on the Snake, between Sheffield and Glossop. (See Club News pages.)

2557 MILES IN 6 DAYS.

BY ALBERT E. CATT

IT will perhaps be as well to explain why I undertook this ride, considering I was the holder of the long-distance record. When, however, it came to my knowledge that there were many aspirants wishing to have the credit of holding the six days' record, which was put up in November under adverse weather conditions, and that they were making arrangements to attack my figures in May and June, I decided to attempt to ride over 400 miles per day for six consecutive days, and thus put the record fairly safe.

To show how keen the aspirants were, one rider, Mr. Williams, of Yeovil, started for a six days' ride on Saturday, May 6th, and succeeded in riding 440 miles a day for two days, but retired on the third day.

MONDAY.—Route: Northampton to London, and from London to Edinburgh. 461 miles.

There was a little crowd of enthusiasts, including Messrs. W. Barratt, E. P. Glasscock, and A. Kinch, when I was given the word to go at 12.30 a.m. All went well until within three miles of Dunstable, which is thirty-three miles from Northampton, when down went the back tyre. It was 2 a.m., pitch dark, and rather a heavy shower came on, but by the aid of the lamp I found that the tyre had been punctured by a piece of glass. The hole was soon repaired, and I was on my way again.

A few miles out of Dunstable I all but collided with two stray horses which were on the road; fortunately, careful riding and moderate speed saved me from what might have been a serious accident. I arrived at the Old Gate House, Highgate, at 3.50 a.m., where I was checked.

My next stop was at Hitchin, where I arrived at 5.12, checked, and had breakfast at Mr. Robinson's. To my great surprise I found my wife waiting at Hitchin in her car. A hasty breakfast, and I was soon off again. My next check was at Grantham, where friend Holmes, the motor scout, filled in my cards for me at 8.18. Just before reaching Doncaster I had my next puncture—a nail in the back tyre; this I quickly repaired, and rode on, arriving at the Racecourse Garage at 10.38. Check. Just before reaching Ferrybridge I had puncture number three—a piece of flint in the back tyre. I had then covered 235 miles.

More Punctures.

My next stop was at the Temperance Hotel, Ferrybridge, for second breakfast. This meant a delay of a very few minutes, as it was all waiting for me. On again to Piercebridge, where I checked in at the Post Office at 2 p.m., having covered 309 miles. Having mounted again, I was almost brought down by a young lady cyclist, who rushed out of a by-road. I severely admonished her in a quiet way, and proceeded to Spennymoor, where my front wheel picked up a long strip of hoop iron, which punctured the tyre and ripped *The Motor Cycle* seal off the front wheel.

At Nevile's Cross I had puncture number five. I thought to myself "This is sickening." My fingers were getting blistered with pulling the tyres on and off, as they were rather stiff covers. However, I repaired the damage, and at Chester-le-Street I was hailed by Mr. Magurk, who had come out from Newcastle on his 3½ h.p. Ariel to meet me. I had proceeded about three miles with him when I had another puncture, which he kindly repaired for me while I looked on.

The next stop was at the Motor Club House, Newcastle, where I arrived with both tyres flat. Mr. R. Crosier and others gave me a hearty welcome, and they had a splendid lunch waiting for me. This was at 4.15 p.m. Whilst having my lunch, Messrs. Middleton and Magurk repaired my punctures in both front and back tyres. I could hear them outside, blowing up the tyres, whilst I was within, devouring a nice chop and chips. I was soon away from Newcastle, accompanied by Mr. Magurk on his speedy Ariel and Mr. Middleton on his new T.T. Triumph, and, my word, it could "hop it." Mr. Middleton accompanied me as far as Alnwick, a distance of forty-five miles. Leaving Alnwick, he took the wrong road. I told him I thought it was wrong, but he said, "It is all right, they have got the road up the other way," so on we went for a mile or so, when he found he had made a mistake. He apologised, and said how awfully sorry he was, but I told him it was all right, a mile or two one way or the other was nothing to me in an event like this, so we retraced our way again to Alnwick, where he soon put me on the right road. I thanked him very much for his company and kindness in coming forty-five miles with me, and we parted.

A Resort to Paraffin.

My next stop was at Berwick-on-Tweed, and here I had to shorten the belt. After leaving Berwick-on-Tweed, a dozen miles beyond I ran out of petrol in a very lonely spot. It was then getting dusk. Luckily, there was a small cottage by the wayside, where the good woman told me there was petrol nine and a half miles off, at Cockburnspath, but the husband said that I could obtain it at a small store two and a half miles away. This was good news. They gave me a few cupfuls of paraffin, and on I went, and just as I was going up a hill the engine stopped, but oh, what luck, about fifty yards off I saw a sign, "Petrol." Leaving Cockburnspath, the machine pulled up, and I found the exhaust valve had lengthened; a few strokes with the file soon put matters right. This was the first mechanical stop, and the distance covered was 415 miles. The next stop

557 Miles in Six Days.—

as at Dunbar, where I arrived at three minutes past ne. The Post Office was closed, but, seeing a ght, I shouted, and the Postmaster came out. I ked him if he would kindly allow me to send a legram to my wife, because I was doing a record le, and if she did not hear from me she would not ep all night; and, although the Post Office had en closed for an hour, he very kindly consented to nd a wire.

A few miles out of Dunbar (it was pitch dark) meone shouted out, "Hi, is that you, Catt?" and I lled up immediately, to find my friend Hosick on lightweight Humber, who had come out about o miles to meet me. It was raining heavily, and had no protection against the wind, which was owing a gale, and he said he had almost given me . He was a very good sport, and brought me ng through Musselburgh to Edinburgh into the ssleigh Garage in record time, at a lively bat, his le lightweight travelling magicently. On reaching Edinburgh was tired out, and was soon asleep the Maitland Hotel. I had en on the road 22¼ hours and vered 461 miles.

UESDAY.—Route: Edinburgh to London—a Distance of 412 miles.

I was early astir and on the road in at 3.20 a.m. All went well il I reached Haddington, where took a wrong road and went les out of my way; retraced my ps, and again took a wrong road. ce more I returned to Haddingn, and tapped at the window of ittle low cottage at the junction the roads which is just outside town. The next instant a onnie wee Scotchman" opened door; he was in his shirt and not look very pleased at being led at so early an hour. I lained my unfortunate position him, and he directed me carey, so I was soon on the right d again. Motor cyclists who know this town will ee that it is a very awkward place to get through. After leaving Haddington, bang went my back tyre burst large enough to put a 2s. piece right ough the outer cover. Luckily, however, I had e out prepared for trouble with a good supply of vas patches, etc., so I made a good job of it.

A 1912 PATTERN FORK.

The new Triumph spring fork of which we published a drawing on March 16th last. From personal experience we have proved that it is a distinct improvement on the standard fitting. A. E. Catt used it on his six days' ride.

Racing a Goods Train.

t Dunbar the railway runs by the side of the d, and there was a fast goods train travelling in same direction as myself, so the driver urged me ave a race with him, which I did; it was quite ting. At Berwick-on-Tweed the roads were so kingly greasy and there were so many people g to work that I was obliged to walk over the ge, after which I went on through Belford to Aln-. After leaving Alnwick I met friend Magurk his Ariel by the roadside; he had come out ty-five miles to meet me. It was raining fast, and a dead head wind, and the roads in places were simply frightful. I arrived at Newcastle safely at 9.30 a.m., where kind friends of the motor club had prepared a splendid breakfast for me. I purchased another Patch Quick outfit, had my tank replenished, and was soon off again, Magurk accompanying me for a few miles.

On arriving at Darlington it commenced to pour with rain, and continued to do so right up to Ferrybridge—a distance of 100 miles—and I had to shorten my belt twice to enable me to get along at all. I checked here at 2.30 p.m., and had a nice dinner which had been prepared. I was in such a condition that the lady had to get a mat to put under my feet again, and she remarked that I was in a worse state than I was when I did the ride in November. I might mention that on leaving Darlington the exhaust valve lengthened again and required a few more strokes of the file before compression returned. Distance covered 664 miles. I was soon off again, and just as I was leaving Doncaster a man rushed out of Corcutt's Garage, where he had been waiting to accompany me a part of my journey. I pottered along, and it turned out to be Mr. Scott, a Triumph rider, who had come from Lincoln to accompany me as far as Grantham. On arriving at the George Hotel my back tyre was flat again, and Scott kindly repaired it for me while I had tea, after which I departed for London in the pouring rain.

My Belt Disappears.

After leaving Grantham, what with the wind and rain, I had to tighten my belt again, and I must have overdone it, because it broke in a few miles. I repaired it and put an adjustable link in.

My next stop was at Hitchin, where I arrived and checked at 9.20. After leaving there in places it was very, very misty, and I almost ran up a bank in rounding a bend. A few miles from Barnet I had trouble again, the belt having come off and disappeared. I turned the machine round and shone the lamp here and there, but no trace of the missing article could I find. After some minutes I began to get alarmed, because I was carrying no spares. Eventually I found it in the grass by the roadside; it had not broken, but simply come unhooked and fallen off. I put the belt on and away I went. After a mile, perhaps more, I suddenly realised that I was going back to Edinburgh. I was tired out—I had been riding over forty hours out of forty-four.

I arrived at the Salisbury Hotel, Barnet, at 10.45 p.m., D. K. Hall kindly checking me. I had been 19 hours 35 minutes on the road, and covered 412 miles, and I can safely say it is the worst ride I ever did; 400 miles dead head wind, and 300 miles of rain. I asked the proprietor to call me at 3 a.m., but he said, "You mean 8 o'clock, old boy."

(To be continued next week.)

More Record-breaking at Brooklands.

NO one who holds a record nowadays is allowed to hold it long. On Friday last, an ideal spring day, with the sun shining and a zephyr-like breeze blowing from the north-west, V. J. Surridge, the plucky Rudge-Whitworth exponent, was in the mood for business. Not quite all the Rudge-Whitworth firm set out to do was accomplished, but on reading further it will be found that Friday afternoon's performances were little short of remarkable, when the fact is taken into consideration that, as far as motor cycles are concerned, Rudge-Whitworth, Ltd., is a very young firm. The first attempt was on the kilometre. Mr. F. Straight timed the start, and Mr. A. V. Ebblewhite the finish. The Rudge was in excellent tune, and reeled off the distance in 34s., or

65.79 Miles an Hour,

beating Bowen's previous best time, which he accomplished on July 14th, 1909, on a 3½ h.p. Bat, 85 × 85 mm., 482 c.c., at the rate of 65.023 miles an hour, time 34.03 secs. Mr.

V. J. Surridge (*Sur Rudge*), who annexed a number of records on Friday last at Brooklands.

Ebblewhite then proceeded to the mile post, but through a misunderstanding Surridge made another attempt on the kilometre, and, finding no one at the end of the distance, ambled gently up to the mile post. He was then told to go for the mile, and unwisely returning the wrong way of the track (although he was previously warned not to do so), he collided with a car which suddenly appeared from behind one of the aeroplane sheds, fortunately without doing much injury to himself, but the front forks of his machine were badly damaged. These had to be replaced, and an hour's delay ensued. Surridge then made an attack on

The Mile which he Covered in 54⅘s.

(66.18 miles an hour). Previous best time: J. Gibson, 17th August, 1910, 3½ h.p. Triumph, 85 × 88 mm., 499 c.c. time, 55.98 sec. (64.31 miles an hour). Surridge's second attempt on the kilometre resulted in his attaining exactly the same speed as that previously recorded. The next item on the programme was an attempt on the hour record, and, armed with a spare Lyso belt and a spare petrol pipe wired to his front forks, he started at 5.50 on a perfect summer evening. His first lap, standing start, was made in the splendid time of 2 mins. 47⅕ secs. (59.54 miles an hour), while his second lap was covered in 2 mins. 36 secs. (63.57 miles an hour). In the next lap misfortune befell him, as a broken exhaust valve caused his retirement. At 6.20 he restarted, and in the fifth lap broke the stud of the magneto contact-breaker cover, to which the advance control rod is attached. He, however, continued to ride consistently, and was well inside record until the twentieth lap. He was then within six minutes of finishing, when he lost the cotter and broke an inlet valve spring, which forced him to withdraw. This was, indeed, hard luck, but he had the satisfaction of gaining the 50 miles record. Time, 49 mins. 2 secs. Previous best, Godfrey's 3½ h.p. Rex. 24th November, 1909; time, 49 mins. 59⅖ secs. Surridge's lap speeds were as follow:

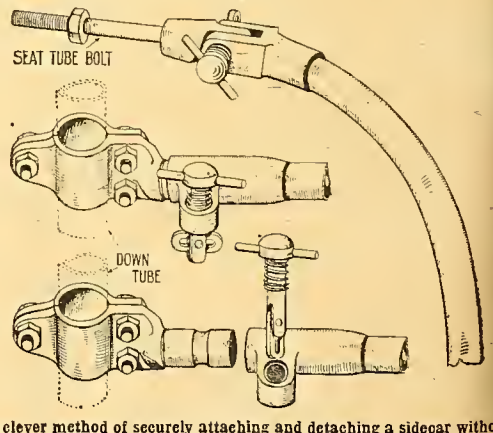
	Miles an hour.		Miles an hour.
1.	57.57	11.	62.0
2.	62.47*	12.	61.9
3.	60.92	13.	62.2
4.	59.80	14.	61.7
5.	59	15.	61.2
6.	61.30	16.	61.9
7.	62.30	17.	61.4
8.	62.08	18.	60.6
9.	61.30	19.	60.2
10.	61.37	20.	retir

*Fastest lap.

Surridge's mount was a standard 3½ h.p. Rudge (stripped) 85 × 88 mm., 499 c.c., fitted with a large tank, B. and carburetter, Lyso belt, C.A.V. magneto, and Dunlop tyres. Pratt's and Shell spirit and Price's oil were used

QUICKLY DETACHABLE SIDECAR FITTINGS.

READILY—we had almost written instantly—detachable are the new design P.M.C. Quickfit couplings, the invention of Mr. Alfred Pilkington. The method of attachment will be grasped from the accompanying line sketches, and it is merely necessary for us to point out that no tools are required to perform the operation of attachment or detachment; in fact, the sidecar can be off or on while another rider is unfastening the toolkit and getting his spanners ready. The device merely consists of a spring controlled cotter, in the ends of which a link is fitted. The action of the spring holds the link permanently in a horizontal position, but withdrawal is easily effected by pressing down the crosspiece. In the case of the down tube and horizontal back stay, a circular groove is formed in the portion permanently attached to the bicycle, and the cotter slides in this groove. A good point that might be overlooked is that this arrangement permits a swivelling movement of the coupling so relieving the frame tube of a good deal of strain. These couplings will be supplied not only on P.M.C. sidecars, but for other makes as well. The Premier Motor Co., Ltd., Aston Road, Birmingham, will further make an allowance for the old couplings.



A clever method of securely attaching and detaching a sidecar without the aid of tools, introduced by the Premier Motor Co., Ltd.

South-East London Open Hill-climb.

THE open hill-climb promoted by the recently formed South-East London M.C.C., at Vigo Hill, near West Maling, Kent, did not receive that support which has of late been accorded to various events of a milar nature, the cause probably being, firstly, its clashing ith other important events, and secondly, that the club is as et too young to have gained the confidence of the men who sually patronise open hill-climbs. There was certainly a mentable want of organisation, and although the hon. sec., r. Vivian Edwards, worked exceedingly hard, he was ractically single-handed, and had not the support of other embers of the club, such as is necessary to ensure the ccess of a fixture of this kind. The hill, which is in a y-lane between West Malling and Wrotham, is very prettily tuated, and in gradient compares favourably with Kop Hill. is about 590 yards in length, and at the steepest part is out 1 in 4. It is what may be termed a very "sporting" ll, the roadway being very narrow with high banks on ther side. There are two sharp bends, which required ry careful negotiation, and it was probably owing to these nds necessitating such extreme care that there were no ills, although several of the competitors, after cutting out r the corners, failed to pick up again.

The surface of the hill is of a chalky nature, and, notwithanding the heavy rain which had fallen in the morning, the rface was very dusty, and each rider left a dense cloud of st in his wake. The results were:

CLASS I., for Junior Tourist Trophy machines, was cancelled owing to insufficient entries.

CLASS II.—For lightweights up to 120 lbs.

Formula.		Time.
Berwick (2 Humber) ...	50.7	A. Bright (2½ N. Hudson) 0
D. Slatter (2 Alcyon)	58.6	N. Slatter (2 Alcyon) ... +4⅘
Bright (2½ N. Hudson)	62.5	H. Berwick (2 Humber) +6⅖

CLASS III.—For T.T. single-cylinders up to 600 c.c.

	Time.
H. A. Cooper (3½ Bradbury)	0
T. G. Baxendale (3½ T.T. Triumph)	+⅘
S. Browne (3½ Bradbury)	+1⅘

CLASS IV.—Touring single-cylinders not exceeding 600 c.c.

Formula.			s.
Barnes (2¾ Zenith) ...	44.7	R. Croucher (3½ Kerry-Abingdon)	0
T. Bright (2½ New Hudson)	57.9	P. Weatherilt (3½ Zenith)	+ 2⅖
Weatherilt (3½ Zenith)	60.0	F. Barnes (3½ Zenith) ...	+11
		A. T. Bright (2½ New Hudson)	+11
		J. Pell (3½ Humber) ...	+45⅕

R. Croucher (3½ Kerry) made fastest time in this class.

T. G. Baxendale (Triumph) negotiating the severe bend at the hill-foot.

S. T. Tessier, jun. (Bat) successfully rounding the second bad corner at speed.

CLASS V.—Touring twin-cylinder machines not exceeding 1,000 c.c.

Only two competitors started in this class.

Formula.			s.
H. G. Dixon (3½ New Hudson)	60.6	S. T. Tessier (5 Bat) ...	0
S. T. Tessier (5 Bat) ...	64.9	H. G. Dixon (3½ New Hudson)	+16⅘

CLASS VI.—For variably geared machines

In this event the riders were timed as usual for a flying start, and then partly ascended the hill, being called upon to stop on a fairly steep portion of the hill, and then restart.

Formula.			s.
F. Barnes (2¾ Zenith) ...	48.9	P. Weatherilt (3½ Zenith)	0
H. Dixon (3½ N. Hudson)	53.9	F. Barnes (2¾ Zenith) ...	+ 5⅕
P. Weatherilt (3½ Zenith)	72.5	H. G. Dixon (3½ New Hudson)	+18⅘
		J. Pell (3½ Humber) ...	+30⅕

CLASS VII.—For any type of machine not exceeding 1,000 c.c.

Formula.			s.
F. Barnes (2¾ Zenith) ...	41.1	S. Tessier (5 Bat) ...	0
H. Dixon (3½ N. Hudson)	52.2	P. Weatherilt (3½ Zenith)	+ 6⅕
		S. Browne (3½ Bradbury)	+ 6⅕
T. G. Baxendale (3½ T.T. Triumph) ...	52.4	T. G. Baxendale (3½ Triumph)	+ 6⅘
		S. A. Denman (5 Bat)	+ 8
		F. Barnes (2¾ Zenith)	+12
		H. Dixon (2¾ N. Hudson)	+16
		G. Brown (3½ Zenith)	+28

S. T. Tessier (Bat-Jap) made fastest time in this class and of the day.

CLASS VIII.—Passenger machines.

This event fell through, there being only two of the entrants on the ground, F. W. Barnes, with the 6 h.p. Zenith and sidecar, and S. Browne, 3½ h.p. Bradbury and sidecar. The former, not having sufficiently recovered from his recent accident, did not feel justified in starting, whilst the latter, like a sportsman, declined to "walk-over."

THE M.C.C. LONDON-EDINBURGH RUN.

The total entry up to date is sixty-four, and entries close at ordinary fees to-morrow (Friday), the 19th inst., and at double fees on the 24th.

M.C.U.I. (ULSTER CENTRE) RELIABILITY TRIAL.

Those who made non-stop runs and gained maximum marks in the above event were W. J. Chambers (B.S.A.), J. Stewart, B. D. Capper, R. McLardy, C. W. Grogan, and L. Maclaine (Triumphs), J. McBride (Premier), J. S. Garrett (Humber), and G. Graham (Rover).

CURRENT CHAT

TIME TO LIGHT LAMPS

SPECIAL FEATURES

(GREENWICH)

May	18th	8.47 p.m.
,,	20th	8.50 p.m.
,,	22nd	8.53 p.m.
,,	24th	8.55 p.m.

A Special Number of "The Motor Cycle."

A special Summer and T.T. number of *The Motor Cycle* will be published on June 29th. Further details will be announced later.

Entries for the T.T. Race.

The following additional entries have been received for the Senior T.T. Race:
J. R. Haswell (3½ h.p. Triumph).
H. Lister Cooper (3½ h.p. Triumph).
J. Woodhouse (3½ h.p. Ivy-Precision).

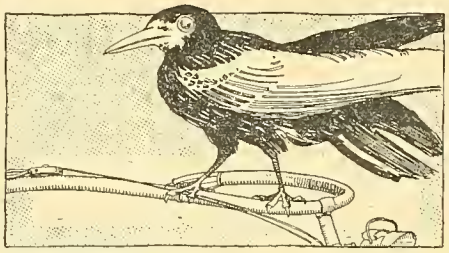
More Records Contemplated.

A well-known rider has notified us that it is his intention to endeavour to establish a new record for the double journey John-o'-Groat's-Land's End-John-o'-Groat's with a motor bicycle and sidecar. He will try to average 20 m.p.h. for the whole trip. Commenting on our leaderette of last week, he says he hopes a road records association will be formed.

Tourist Trophy Fund.

In connection with the above fund, the A.C.U. Committee, who made an appeal in our issue of May 4th to all motorists for subscriptions to defray the cost of holding the T.T. Races in the Isle of Man, have received the following amounts:

Triumph Cycle Co., Ltd. ...	£10	10	0
Rudge-Whitworth, Ltd. ...	10	10	0
The Motor Cycle ...	5	5	0
Mr. M. J. Schulte ...	2	2	0
Mrs. Schulte	1	1	0
P. Butler	1	1	0
Shropshire M.C.C. ...	1	1	0
E. M. P. Boileau	0	10	0



A Trial Postponed.

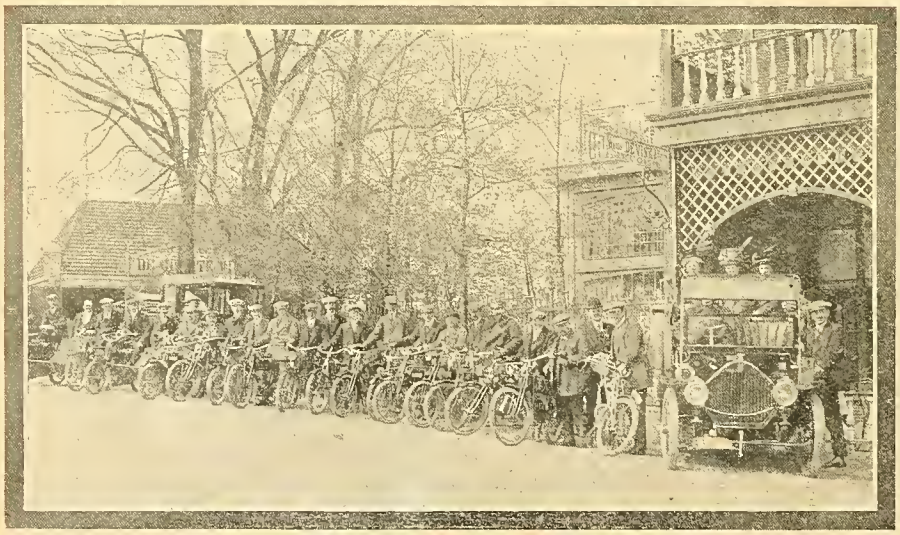
We regret to hear at the moment of going to press that, owing to the illness of Mr. W. Pratt, the P. and M. thousand miles trial without a tool bag has been postponed.

Mr. Cove Convalescent.

Mr. H. G. Cove, a prominent member of the Auto Cycle Union, who has for many years acted as judge in various important A.C.U. and other competitions, has, we regret to hear, had to undergo an operation. We are happy, however, to be able to state that the operation has been successfully performed, and that he is progressing satisfactorily.

A Warning.

A resident of high standing in Princes Risborough has asked us to warn motor cyclists to be particularly careful in driving through that town. Many people have complained to the police about the speed of motor cyclists along the lanes adjoining Kop Hill, the speed at which corners are taken, and also of the practice of riding along the grass foot-paths to avoid certain stony patches on the road leading to the hill. We sincerely hope that this warning will have the desired effect.



FIRST 1911 SUMMER MEETING OF THE DUTCH M.C.C.
Among the motor cycles in the group are the following English makes: Humber, Rudge, Douglas, and Matchless. There are also represented: F.N. four cylinder, N.S.U., Magnet, and Simplex, also a Humber car.

2,557 Miles in Six Days.
By Albert E. Catt.

Motor Cyclists' Experiences in Far-off Lands.

Results of Hill-climbing Competitions.

Tar Spraying of Main Roads.

Tar-spraying is in progress on th Preston and Liverpool and Preston an Blackpool main roads.

The B.M.C.R.C. Third Members' Meeting.

A very good entry was received fo the third members' meeting of th British Motor Cycle Racing Club fixe for yesterday (Wednesday). The firs eliminating handicap secured eleve entrants, and the first 1911 time tria twenty-one. Thirteen riders we down to take part in the three la scratch race for the Palmer Tyre troph

A Stringent Measure.

We extract the following paragrap from the R.A.C. *Journal:*

BRADBURY MACHINES IN COMPETITION —As a result of the protest made again the Bradbury machines after the Oxfo Motor Cycling Club's open hill-climb o Saturday, April 8th, the committee h decided "That entries tendered b Messrs. Bradbury and Co., or the agents, for competitions promoted by th Auto Cycle Union be not accepted *sin die.*" It was further decided "Tha Mr. A. T. Stanton be snspended fro taking part in any competition held nnd the Open Competition Rules of the Au Cycle Union *sine die,* and that h licence be withdrawn."

An Unfortunate Misunderstanding.

We have received several lette regarding the unfortunate misunderstan ing in connection with the three mil motor cycle handicap at the Ro Racing Cyclists' Club sports at Aston the 6th inst. The hon. sec. of the Sutto Coldfield A.C., Mr. Howard Smith, h sent us a copy of a letter he h addressed to the A.C.U. on the sa snbject. It appears that P. J. Eva (2 h.p. Humber) was generally co ceded to be the winner of his he (the re-run second heat), but w informed by the judges that had not won, and they gave Chitty (Frays) as the winner. Eva continued to protest, and a consta was called to remove him from t enclosure. Following this incident, t competitors who were eligible for t final refused to start, and as this l only two to contest the final, the offici recalled Evans, and informed him as act of grace they would allow him ride in the final. This he refused to d on the grounds that if there was a doubt in the minds of the officials, th should have ordered the heat to be aga run. The A.C.U. has been asked adjudicate, the motor cycle race havi been held under its open competition rul

veight Climbs the Brooklands Test

rst two or three-speed lightweight in the B.A.R.C. certificate for g the test hill was a 2½ h.p. New The rider was Roy Walker, who shed the feat last week.

es' Day at Brooklands.

ponse to a letter from the R.A.C. whether the Coventry and War- M.C. would support the pro- ssociates' "Gala" day at Brook- July 29th, that body replied in native, at the same time suggest- inclusion of events for motor This same suggestion was made ssue of April 13th.

Decision at the Bristol Hill-climb.

as. S. Patterson, M.B., M.R.C.S., ed as one of four judges at the B. and M.C. open hill-climb on th, has sent us a copy of a letter has addressed to the hon. secre- the above club, referring to the cation of J. H. Slaughter. It remembered that Slaughter was ed for using what the judges d to be an inefficient silencer. istol club subsequently reversed cision. Dr. Patterson considers action in reversing the judges' is decision is one of vital interest porting side of the pastime, and the purity of the sport. He ut that in all branches of sport es' decision is final.

nths' Imports and Exports.

he four months ended April 30th rts for the last three years were :

9.	1910.	1911.
ycles—		
263	£15,669	£18,620
ereof—		
470	£20,148	£22,041
733	£35,817	£40,661

xports for the same period are ed by the values below :

9.	1910.	1911.
cles—		
467	£29,022	£64,950
ereof—		
317	£13,080	£21,476
784	£42,102	£86,426

rmous increase in our exports noted. The value has been on ase for years, and it seems likely stained.

Go-anywhere Machine.

the Amateur r. Trade Trial of ntry and Warwickshire M.C., anged mounts with Roy W. n order to gain another experi- he fascinating little 2½ h.p. New and its no less delightful three- b gear. The speed of the little ide by side valve J.A.P. is sur- forty-five miles an hour being in touring trim. Add to this that the three-speed hub brings he calibre of Sutton Bank easily s range and one begins to wonder g the 3½ h.p. single-geared will retain its popularity. After r mile run we tried the New on Stoneleigh Hill, and found arting on a gradient of 1 in 9 is ple as falling off a log" as aptly put it.

FUTURE EVENTS.

May 27—Herts. County A.C. Open Speed Trials.
June 2-5—M.C.C. London-Edinburgh Run and Return Journey for the M.C.C. Challenge Cup.
" 5 (Whit Monday)—Brooklands A.R.C. Meeting.
" 5—Dublin and District M.C.C. Open Reliability Trial to Lisburn.
" 10—A.C.U. Race Meeting.
" 10—Nottingham and District M.C.C. Open Speed Trial at Clipstone.
" 10—Birmingham M.C.C. Open Hill Climb Shelsley Walsh.
" 10-11—Bradford M.C.C. Bradford to London and back. Twenty-four Hours' Open Reliability Trial for W. Briggs' Trophy.
" 17—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
" 30—Junior T.T. Race in the Isle of Man.
July 3—Senior T.T. Race in the Isle of Man

Centaur Redivivus.

All readers will learn with pleasure that Centaur motor cycles are not to sink into oblivion, and, what is more, they will most likely be represented in the T.T. Race. F. W. Applebee advises us that he is entering a Centaur lightweight for the Isle of Man event.

New Triumph Gears.

The other day we were permitted to examine a two-speed geared machine which the Triumph Cycle Co. have had under test for three months. In the model we are at liberty to mention, the frame and engine are of the ordinary Triumph design, the two-speed gear being embodied in the bottom bracket. A short chain communicates the power from the engine to the gear, the final transmission being by means of an ordinary rubber V belt. The driving pulleys being of large size, belts have a much longer life. A "kick" starting arrangement is used. Though we give these few details as a matter of interest to motor cyclists generally, and Triumph riders in particular, we repeat our previous hint that writing for further details at this stage would be in vain, as the Triumph Co. is not the firm to market any article until it has undergone the most exhaustive tests on the road under everyday conditions. It is also unlikely that the change-speed model will figure in a list or catalogue this season.

The Motor Cycle in Madras.

A correspondent informs us that there are nearly 350 motor cycles in use in Madras.

The Inter-club Team Trial.

The M.C.C. team trial regulations were given in our last issue. Already a dozen clubs have signified their intention of competing. *The Motor Cycle* challenge cup competition has always been a success.

The Singer Co. and Change Speed Gears.

The Singer Co., Ltd., is the latest firm to devote attention to the change-speed gear question. A 3½ h.p. model with two-speed bottom bracket gear is at present on the stocks, and a reference to its performances may be expected ere long. The Singer gear box is formed in one with the engine crank case, and has four pinions always in mesh, the changing of the gears being performed by means of dog clutches. A V pulley on the right-hand side of the gear box conveys the power to the road wheel. As the gear is only in its chrysalis stage at present, we refrain from publishing an illustration

S.E. LONDON M.C.C. COMPETITION ON VIGO HILL, NEAR WEST MALLING, KENT. A competitor making a good ascent of the steepest part of the hill, which was near the summit.

AMATEURS v. TRADE.

Coventry and Warwickshire Motor Club's Pioneer Event results in an Easy Victory for Trade Members.

ALTHOUGH some of the amateurs in this interesting event are comparatively unknown to the average reader, the pick of the world's best trade representatives were engaged, consequently their decisive victory of 1,165 against 781 marks will hardly be wondered at. There were exactly a dozen on each side, notable absentees from the trade entrants being W. W. Douglas and A. V. Sumner, the last mentioned arriving late at the start. The rendezvous was Whitley Common, on the outskirts of Coventry, where a good crowd collected. The competitors were despatched in pairs at 1 p.m. by Mr. A. Wright, assisted by Messrs. W. Grew, J. V. Pugh, and V. A. Holroyd. Twenty-five competitors actually started; J. H. Pountney (3½ h.p Rover), trade, having no partner, was allowed to compete for the non-stop award. The main London Road was followed to Daventry. The first man stopped at the fifteenth mile, and it was none other than A. E. Catt, the hero of two long distance records. He started on his Triumph exactly as it finished the 2,557 miles in six days, refusing to touch a single part. A sooted plug proved his downfall, but, undaunted, he continued with the others to the finish.

Newnham Eliminated Four Amateurs.

The ranks of the amateurs were still further depleted by the time Newnham Hill was reached (twenty-two miles), for S. H. Davis (3½ h.p. Rex) got into a rut and fell off; J. F. Spencer (Triumph) stopped on the 1 in 6 portion with his belt slipping; H. J. Dixon (3½ h.p. B.S.A.) failed, too highly geared; and P. W. Johnson's handle-bar control levers fouled one another so that he could not open the throttle—a hitherto unheard of trouble. The hopes of the amateurs—who were never really sanguine of success against such stalwarts—were rudely shattered by this reverse, but strangely enough no more trouble was experienced by any of them.

A course of 22½ miles in Northants, selected by Dr. J. C. O'Rafferty and splendidly marked by Mr. H. Reynolds, of Daventry, was now covered three times, and by the second lap a number who were new to riding without a watch or speedometer were obviously at sea. Apparently they soliloquised in their own minds "that So-and-so is usually near the top, so I will stick to him." Anyway those sentiments exactly befitted the case, for gradually all the competitors closed up and paraded rou the course like a flock of sheep. The dust in parts v appalling, and occasionally a rider, tired of the dust, wo forge ahead, only to be hung on to tenaciously the mainder thinking he had seen a clock! All had to g and bear it. The crowd of spectators on Newnham enjo a fine sight owing to this condition of things, for on

Roy W. Walker (2½ h.p. New Hudson), trade, and S. H. Davis (3½ h.p. Rex amateur, starting.

second ascent over a dozen competitors tackled the ris a bunch. Every one climbed the hill—some slowly, s fast, and it was a sight worth going a long way to All the two-speed gear users changed down.

The descent in single file of the other side of Newn with its stony surface, caused many a hair-raising s but once on the main Holyhead Road again the compet collected together.

Competitors assembling at the start, Whitley Common, on the outskirts of Coventry.

eurs v. Trade.—

en this flock swooped down on the timekeeper. Mr. . Walford, at the secret check, he confessed that he ttterly flabbergasted, and as two had passed before he ned himself in position, it was deemed advisable to e the times. Round the course again the competitors most regularly, but nearly everyone was, unconsciously, ow.

e is a fickle goddess. On these reliability trials it is to see a string of competitors by the roadside tyre ing, but up to the eighty-fourth mile not a single ure had been experienced, and that unlucky wight, d Williamson, was the only one to suffer. On the l round of the cross-country section, from the Holy- Road to the Banbury Road, some wary individual ought to have known better, and kept his eyes on ad dodging nails, saw a church clock! Soon he was ing in his own mind how far he had travelled, and to the conclusion he was twenty minutes late. horically applying whip and spur, he forged through ock and set the pace, the remainder hanging on, as heir usual wont. For mile after mile the pace was ned, and the string of competitors spread out more. Somehow or other they got together again, and on the last round the same competitor watched for the same clock, came to the same conclusion, and the same series of eventualities occurred, but this time with a different result. Harold Williamson picked up a big nail, the others rode as fast as they dared without running out of petrol, but one by one came to the conclusion that the man who had the "inspiration" was wrong, and left him to finish with a solitary friend.

But every competitor was late at the finish, some nearly half an hour. A. Elson (3½ h.p. Triumph) and A. L. Ommaney (3½ h.p. Rudge), who started and finished together and rode most consistently throughout, separate from the rest of the bunch, were the nearest at the finish with 6¼ minutes error—exceptionally good considering the duration of the ride. It was, indeed, unfortunate that this was the couple missed at the secret check, for they would most probably have shared the Kempshall tyres.

An Easy Win for the Trade.

The official result is given hereunder. Every mile covered by a competitor without a stop counted one mark for his side. A souvenir will be awarded to all who accomplished non-stop runs:

TRADE.	Miles covered without a Stop.	Remarks.	Error in Mins. at Finish.
Ommaney (3½ Rudge)....	100	—	6¼
Newsome (3½ Rover)	100	—	13¼
eyton (3½ Triumph)	100	—	25½
Walker (2½ New Hudson)	79	Missed course	25½
ilcy (2½ Handy Hobart)	100	—	29
Burney (3½ Rudge)	100	—	23½
ight (3½ Humber)	100	—	16¾
ates (3½ Humber)	100	—	15¾
Newsome (3½ Triumph)	100	—	14¾
lliamson (5 h.p. Rex)	84	Puncture ..	—
Walden (3½ Triumph) ..	100	—	19
rd (3½ Rex)	100	—	19¾
TEAM TOTAL ..	1,163		
Pountney (3½ Rover)	100	Not in team..	16¼

AMATEURS.	Miles covered without a Stop.	Remarks.	Error in Mins. at Finish.
A. Elson (3½ Triumph)	100	—	6¼
H. M. Carter (3½ Triumph) ..	78	Missed course	—
J. F. Spencer (3½ Triumph) ..	22	Std Newnham	—
S. H. Davis (3½ Rex)	22	Std Newnham	—
E. A. Isherwood (3½ Triumph)	100		19¾
H. J. Dixon (3½ B.S.A.)	22	Std Newnham	—
A. E. Catt (3½ Triumph).....	15	Sooted plug	—
G. Smith (3½ Triumph)	100	—	13
J. R. Haswell (3½ Triumph) ..	100	—	21
P. W. Johnson (3½ Triumph)	22	Std Newnham	—
A. C. Riley (3½ Triumph)	100	—	19
C. T. Lloyd (5 Rex)	100	—	11¼
TOTAL ..	781		

above trial further served as an eliminating test the amateurs for the M.C.C. Team Competition. oventry and Warwickshire M.C. having been singularly successful in this event, winning on several occasions. The committee has decided that this year's team shall consist mainly of private owners.

CLUB NEWS.

Hull and East Riding A.C.C.

official result of the 100 miles non-stop trial was as : E. L. Brown (3½ h.p. Rex), C. Edgar (3½ h.p. ury), and J. R. Stringer (3½ h.p. Bradbury). These riders all made non-stop runs.

A Club for Clacton-on-Sea.

ral motor cyclists in Clacton and district are anxious n a club if sufficient support is forthcoming. Those ted should communicate with Dr. Howard Mitchell. House, Carnarvon Road, Clacton-on-Sea.

Doncaster and District M.C.C.

en competitors took part in the above club's paper- on Thursday last. The hares, F. H. Dunstan and J. ith, both on Bradburys, won the prize which will ded. The course was about forty miles.

Walthamstow M.C.

result of the Annual Dinner Cup Competition was as . The winner was found by two secret checks *en* and the nearest to schedule time:

	Error. M. S.
F. A. Applebee (Scott and sidecar) ...	0 $7\frac{4}{5}$
J. Henbrey (7 V.S. and sidecar)	0 13
J. H. Kerr (5 Rex and sidecar)	0 $27\frac{2}{5}$

members' hill-climb will take place next Saturday, th inst. There are five classes.

club has decided to enter a team for the M.C.C. team ition for *The Motor Cycle* Challenge Cup.

Southampton and District M.C.

A successful paperchase took place on the 10th inst. The hares, A. H. Burnand and H. P. Young, were on a 6 h.p. tricar, and laid a trail of confetti for twenty-five to thirty miles without being caught. The vice-captain, S. Docking, was only a few seconds behind.

Edinburgh and District M.C.

The open reliability trial will take place on Tuesday, the 23rd inst., and is open to any form of motor vehicle. Entry forms, etc., are now ready, and can be obtained from Mr. Robert J. Good, Braefoot, Liberton. All entries must be sent in by the 20th inst.

Glasgow M.C.C.

The formula results of the open hill-climb, described in the last issue, have now been worked out and are as follow:

	Figure of Merit.
Class I	
D. S. Baddeley (2½ h.p. New Hudson) ...	117.2
W. Hutchison (2¾ h.p. Douglas)	104.8
Class II.	
H. W. Ballardie (3½ h.p. Triumph) .. .	274
F. W. Murray (3½ h.p. Rudge-Whitworth) ...	267
Class III.	
J. R. Alexander (5 h.p. Indian)	238
E. Hunter (7 h.p. Indian)	197
Class IV.	
G. W. Orr (3½ h.p. Ariel)	208
A. G. M'Lennan (3½ h.p. Triumph)	205

Club News.—

Leeds M.C.C.

To-morrow (Friday) evening, at eight o'clock, Mr. F. Hulbert (Triumph Cycle Co., Ltd.) will lecture before the members of the above club, at the Grand Central Hotel, on the Triumph motor cycle. All motorists are invited.

Hartlepools and District M.C.C.

This club held a novelty hill-climb on the 10th inst. over a course of about half a mile near Wynyard. In the middle of the course was a very bad hairpin turn at which most of the riders failed. The results were :

		M.	S.
C. W. Walker (3½ h.p. Triumph)	... ...	1	47½
W. T. Walton, jun. (3½ h.p. Triumph)	...	1	56
Eric Forslind (3½ h.p. Triumph)	... ...	1	58

Cambridge University M.C.C.

The following are the results of a speed trial held on Thursday last :

	LIGHTWEIGHTS.	Time. M.	S.
1.	N. B. Stewart (Moto-Rêve)	2	16⅗
2.	A. Drysdale (Motosacoche)	2	31⅖
	STANDARD SINGLES.		
1.	A. W. Brittain (3½ Bradbury)	1	7⅕
2.	A. E. Cliff-McCulloch (3½ Bat) ... ... / John Reid (3½ Triumph)	1	11⅕
	T.T. SINGLES.		
1.	J. W. Cox (3½ Triumph)	0	59⅖
2.	N. Gray (3½ Triumph)	1	0
	TWINS UNDER 650 C.C.		
1.	C. R. Farnsworth (5 Indian)	0	58⅘
2.	B. E. V. Bernard (5 Indian)	1	7⅘
	TWINS OVER 650 C.C.		
1.	G. H. Bowman (8 Zenith)	0	57
2.	I. C. Maxwell (8 Matchless)	1	1⅖

Sheffield and Hallamshire M.C.C.

The members held a climb on Saturday, May 13th, from Edale Head to Mam Tor, one and a half miles of gradient varying from 1 in 4 to 1 in 12.

The prize was to be awarded to the first rider to reach the summit, the order of starting to be drawn for. The winner was J. Ardern (3½ h.p. Bradbury).

The results of the Snake Hill-climb on the 6th were—D. Bradbury (3½ h.p. Norton) made fastest time of the day.

CLASS I.—Lightweights.

		M.	S.
1.	F. Sheen (2¾ Douglas)	6	41⅘
	CLASS II.—Standard Touring Singles.		
1.	D. Bradbury (3½ Norton)	3	28⅗
	CLASS III.—Variably-geared Machines.		
1.	C. Bellamy (3½ Zenith)	4	13
	CLASS IV.—Open.		
1.	D. Bradbury (3½ Norton)	3	38
	CLASS V.—Traders.		
1.	E. Cross (3½ Triumph)	3	40
	CLASS VI.—Novices.		
1.	D. Bradbury (3½ Norton)	3	36⅖

First and second in each class were awarded a silver and bronze medal respectively.

Edinburgh and District M.C.

The results of last Saturday's hill-climb at Manor Hill, Peebles, are given hereunder. There were fifty entries, and there was a large attendance. The fastest time of the day, 29⅖s., was made by two competitors, viz., J. D. Morrison (8 h.p. Bat) and A. J. C. Lindsay (6 h.p. Matchless). In running off the tie the latter won by ⅗s.

CLASS I.—Single-cylinders (Handicap).

		Formula.	Time.
1.	C. McGregor (3½ Bat)	420 ...	38s.
	CLASS II.—Multi-cylinder (handicap).		
1.	A. J. C. Lindsay (6 h.p. Matchless) ...	390 ...	32⅖s.
	CLASS IV.—Novice (handicap).		
1.	A. J. C. Lindsay (6 h.p. Matchless) ...	420 ...	30⅘s.
	CLASS V.—Single-cylinder (scratch).		
1.	C. McGregor (3½ Bat)		38s.

Class VI., multi-cylinder (scratch). This class provided the best sport of the day, some very exciting ascents being witnessed :

1. J. D. Morrison (8 Bat) ... ... 29⅖s.

Harrogate and District M.C.C.

On the 13th inst. this club held a speed-judging con tion over a give and take road of twenty-seven miles. result was W. E. Grange (3 h.p. Bradbury) and F. M (2 h.p. Humber) tied for first place, both being 30s.

Birmingham M.C.C.

The annual speed-judging competition was held Saturday on a course twenty-four and a quarter mi length. Watches were allowed, but no speedometers. R

		Speed.	Error
1.	W. H. Egginton (Zenith)	19⅔ miles	0m. 54
2.	R. W. Duke (Zenith) ...	15⅔ miles	1m. 50
3.	S. Smith (Norton) ...	15⅔ miles	2m. 0

York County M.C.C.

This club's first quarterly trial took place on May 6t a course of ninety-nine miles. Time allowed, 4h. 57m. route was from Leeds *viâ* Harewood, Otley, Skipton Settle to Cross Streets, returning *viâ* Skipton, Bolton B and Harrogate to Leeds. The following made non-stop H. Wilkinson (3¾ h.p. Scott), R. W. Glenn (clutch Tri W. E. Asquith (clutch Triumph), A. B. Belhrough (Zenith), Dr. Dean (7 h.p. two-speed Rex), and J. C. B Mitchell and Miss M. Mitchell (3½ h.p. Premier and sic

Bradford M.C.C.

The above club held a reliability trial over a 150 course on the 7th inst., the trophy being the Rex Cup ten guineas) given for riders who have never won a medal in a reliability trial. The course was *via* Sk Kirkby Lonsdale, Hawes, Ripon, and Harrogate. Res

1.	Geo. Reddihough (3½ P. and M.)	— 2
2.	Sheard Grange (3½ Triumph)	+ ¼
3.	H. H. Bentley (3½ P. and M.)	+ 2¾

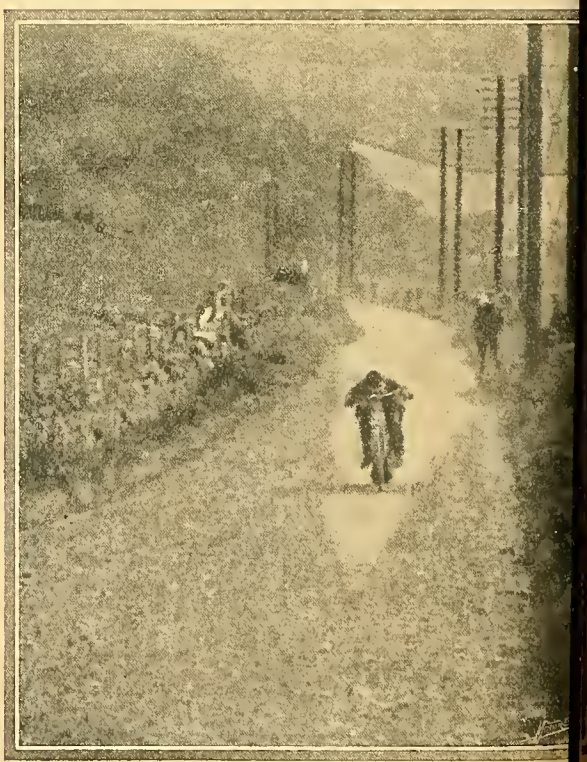
North Staffordshire M.C.C.

A petrol consumption trial took place on the 7th based on the formula :

$$\frac{\text{Weight of rider and machine}}{\text{Ounces of petrol used}}$$

The results were :

1. H. Madeley (2¾ h.p. Douglas).
2. W. Higson (3½ h.p. Triumph and sidecar).



Edinburgh M.C.C. hill-climb at Manor Hill, Peebles. W. Deans (3½ h.p. R ascending. Note the stony condition of the surface.

Surviving competitors in the Willesden Green M.C.C. 100 miles reliability and speed-judging competition.

High Wycombe and District M.C.C.

A non-stop trial was recently held by the above club, the winners being:

1. H. Eccles (4½ h.p. Minerva).
2. R. Pugh (3½ h.p. Bat).
3. G. Hugo (3½ h.p. P. and M.).

Ripon M.C.C.

The first flexibility hill-climb took place on Saturday last at Biggin Bank, and of nine entrants W. Hunsworth (5 h.p. Rex de Luxe) proved to be the winner, C. Kay (3½ Rex) being second. The fastest time of the day was done by J. H. Rostron on a 3½ h.p. Triumph.

Pontefract M.C.

A speed trial will be held on Thursday next at Byram Park, near Pontefract. There will be two events, open to members of the Northern League—one class for twin-cylinders, and one for singles. There will also be a class for lightweights if there are sufficient entries.

Communications should be addressed to Dr. E. M. Dolan, Horsefair, Pontefract. Entries close on the 22nd inst.

Westmorland M.C.C.

A very successful hill-climb was run off on May 6th at Aughton, near Carnforth. A good entry resulted in keen competition for the Carnforth Garage Cup offered by Mr. C. B. Dean, and prizes by Mr. B. Jefferys (Kendal), Messrs. the Dunlop Tyre Co., Ltd., and Lycetts, Ltd. Results on formula:

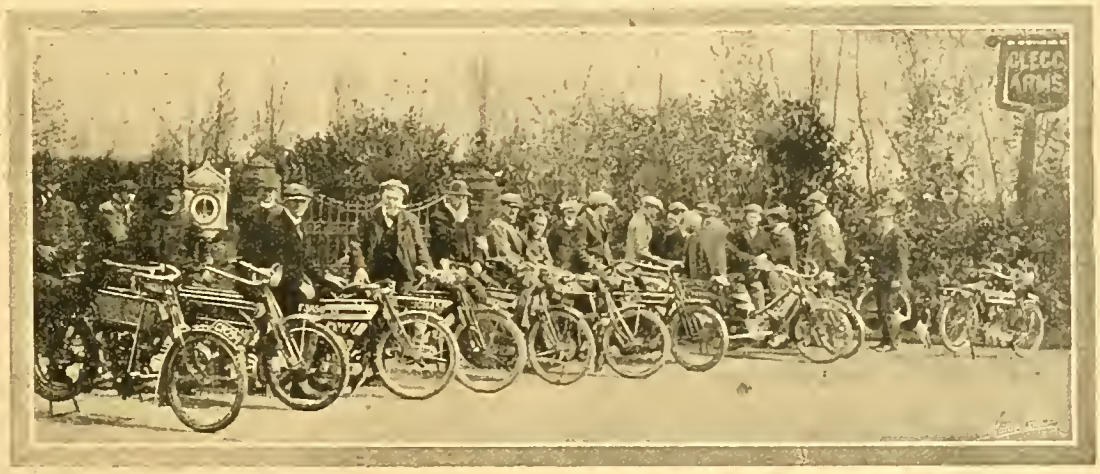
Single-cylinder class.

		Fig. of Merit.
1.	S. W. Phillpott (2 h.p. Humber)	48
2.	W. Woolley (2 h.p. Humber)	58
3.	G. W. Braithwaite (3½ h.p. Zenith) ...	76

Twin class.

1.	C. B. Robinson (2¾ h.p. M.R.)	87
2.	H. Jackson (2¾ h.p. Douglas)	91
3.	J. W. Nelson (3½ h.p. Scott)	103

Fastest time of day, Hugh Gibson (3½ h.p. Triumph).



A week-end meeting of the Mersey Motor Club at the Clegg Arms, Cheshire.

Willesden Green C. and M.C.C

In the 100 miles reliability and speed-judging competition held by the above club on the 7th inst., the following were the results:

1. J. C. Ball (3½ h.p. N.S.U.), losing 29 marks.
2. C. W. Sufford (2¾ h.p. Douglas), losing 38 marks.
3. W. Gregory (7-9 h.p. Peugeot and s.c.), losing 45 marks.

H. Turner (5-6 h.p. V.S. and sidecar) and G. Bull (7-9 h.p. Peugeot and sidecar) also made non-stop runs.

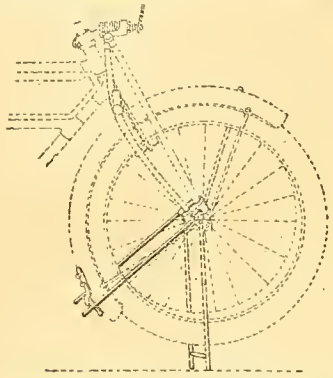
The first prize was a pair of heavy Midland tyres, presented by the Midland Rubber Co., Ltd.

The club's next reliability trial will be to Coventry and back on July 16th.

Members of the Ripon Motor Cycle Club who took part in the hill-climb recently held on Priggin Hill. (See paragraph above.)

The One and Six Hours' Record.

It appears that Lieut. Stewart used a Continental as well as a Hutchinson tyre and Pratt's spirit when he broke the six hours' single-cylinder record on a Trump-Jap. W. F. Newsome's Triumph on which he broke the hour record was fitted with Dunlops.



The Corbin front wheel stand, which has been introduced by the Patent Developing Co., 80, Lionel Street, Birmingham, to fit all the older pattern Triumphs and machines which have Druid forks.

Testing Sparking Plugs.

The United Motor Industries, Ltd., 45-46, Poland Street, W., have recently submitted samples of their L.M. model D sparking plugs to Faraday House for testing purposes. The Faraday House report respecting the insulation resistance measured between the high tension terminal and the earthing nut was found to be greater than 375,000 meghoms with a direct pressure of 500 volts. The leakage test was also very satisfactory.

A Smart Coat for Motor Cycling.

A. W. Gamage, Ltd., Holborn, have just introduced a new Gabardine showerproof jacket and overalls, also a leather and fleece under jacket. Our illustrations depict the under jacket which, when worn under an ordinary coat, should keep a motor cyclist snug and warm in chilly weather. The articles are reasonable in price, and

Two styles of Gamage's undercoats, made in frieze or leather. They are useful for wearing under an ordinary coat.

the under jacket when not in use can be rolled up into a small compass and strapped to the machine. The fleece jacket is double breasted, and the leather jacket is fitted with a flap to exclude the cold wind.

SPARKLETS

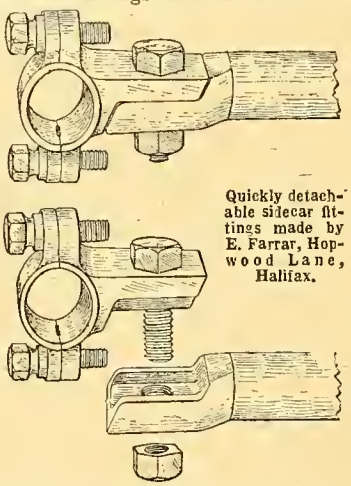
Catalogues Received.

The Forward Cycle Co., 1-9, Edmund Street, Birmingham, send a well illustrated list of the Forward lightweight motor bicycle, single and twin, also accessories, tyres, and clothing.

A catalogue of tyres and accessories has reached us from the Dunlop Pneumatic Tyre Co., Ltd., Para Mills, Aston Cross, Birmingham, which contains a quantity of information of real value to motor cyclists on the care of tyres. Users as well as non-users of these world renowned tyres would benefit by consulting the booklet.

A Moderately Priced Sidecar.

A sidecar which is really good value for the money asked for it is the Portland, sold by Messrs. Maude's Motor Mart, 136, Great Portland Street, W. It has quickly detachable fittings and an extra strong



Quickly detachable sidecar fittings made by E. Farrar, Hopwood Lane, Halifax.

wheel with twelve-gauge rustless spokes. All lugs are pinned and brazed. All telescopic tubes and joints are plated, while the yoke ends to the rear stays are adjustable in every direction.

A New Appointment.

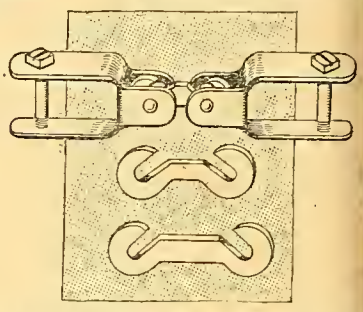
Geo. E. Roberts, a well-known motor cyclist, has recently resigned his position with the Simms Magneto Co., and is now in the employ of Messrs. Friswells, selling agents for Standard cars.

Activity in Roc Works.

We were interested to observe the activity in the Roc Works at Hay Mills, Birmingham, on the occasion of a recent visit. Besides numerous conversions of old single-geared warriors, the Roc gear set was being built up into many and varied designs of new frames, demonstrating the vogue the Roc gear has attained. By the way, a small gear with live axle is being designed for the Humber lightweight. It will be little more than half the weight of the 3½ h.p. gear set. Experiments with the double-seated tricycle are not yet complete. The latest model has a big Precision single-cylinder engine, but Mr. Wall has a decided penchant for engines of the two-stroke type.

The Indian Head.

The Hendee Mfg. Co., 178, Great Portland Street, W., have sent us samples of the well-known Indian Head printed in oil colours on blue wool felt. The firm point out that there are many uses to which these can be put. In particular they make good



The King hook adjustable belt fastener, the latest introduction of the Forward Cycle Co., Edmund Street, Birmingham.

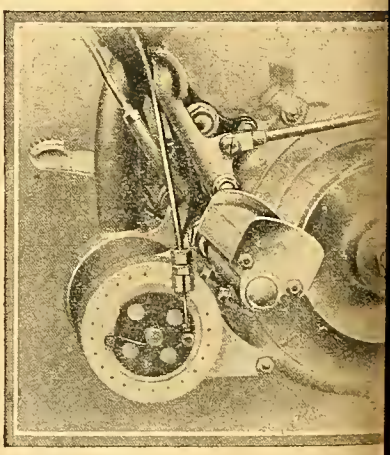
cushion covers for use in sidecars. The heads could also be cut out and sewn on the back or front of sweaters. They will be pleased to supply them to any rider of Indians on application, the price being one shilling each.

A Historical Retrospect.

We have received a copy of a booklet just issued by the Continental Tyre and Rubber Co., 102-8, Clerkenwell Road, E.C., containing a history of the motor cycle. The letterpress is illustrated with reproductions from photographs of the earliest types of motor cycles as well as examples of modern mounts mostly taken from the journal.

A Coronation Souvenir.

Hobart Bird and Co., Ltd., Coventry, have just issued a Coronation souvenir, a copy of which will be sent to readers of *The Motor Cycle* as long as the supply lasts. The booklet contains a history of the firm and illustrations of their 1911 models. The cover design is an attractive coloured reproduction of portraits of Their Majesties King George and Queen Mary, surrounded by the Royal standard and a view of Windsor Castle.



An original feature of the new Rover is the Bowden controlled silencer cut-out operated from the handle-bar. The illustration also shows the arrangement of the clutch pedal, footrest, and brake pedal mounted independently of the footrest—the best practice.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Formulæ in Hill-climbs.

WHAT is generally referred to as the Auto Cycle Union formula for hill-climbing competitions, originally framed by Professor Callendar in the early days of the pastime, has fallen into bad repute, and committee of the A.C.U. has been requested to find nother formula which shall be more suitable to ndern conditions. For those who do not know the .C.U. formula it will be well to explain that it is

$\frac{}{T}$, W being the total weight of rider and machine,

the cubical capacity in centimetres, and T the time seconds. Now it has been found that this formula vours a small-sized cylinder and a heavyweight ler and machine. In consequence, smart comtitors in hill-climbs have been known to add all e weight they possibly could to the machine in the rm of tools and accessories and even to fill their ckets with weighty articles to assist them to win formula. For this reason a committee has been ked to find a better formula. The question is, will be able to find one that will be as simple work out, or, if it does find a better, will ir able to prevent competitors taking advantage of y flaw there may be in its application to different oes of motor cycles?

Better formulæ there may be, but it should be rne in mind that the simple one used up to the esent is comparatively easy to work out. Whatever ape the new formula may take, we hope it will be easy to calculate as the old one, for already the rking out of results of big events is no light task the officials concerned. In cases where clubs have not the good fortune to secure the services of expert calculators to work the results for them the task should be made as light as possible.

Amateurs v. The Trade.

TWO recent contests out of the ordinary run of competitions have suggested to us how interesting and instructive a representative trial on the same lines could be made. By this remark we mean that the world's best should be represented on either side, irrespective of the clubs to which the riders belong. Obviously such a competition could only be arranged by a governing body and a special selection committee, which would choose without fear or favour half a dozen or a dozen of the best exponents of the motor cycle from among the ranks of private owners and the trade. The selection would be made much on the lines followed by those responsible for English international football teams, and selection by the governing body to compete in a championship event of this kind would be held an honour by motor cyclists. Midsummer would be the best time of the year. We do not doubt that the idea would be taken up by the riders with enthusiasm. So far, the two amateur v. trade matches have hardly been sufficiently representative to give a fair reflex of the capabilities of both sides, nor can they be considered to be thoroughly representative until the question of club membership is waived and the selection made without regard to the clubs to which any probable participant may belong, or the district in which he may reside. Probably the ideal, if it were possible, would be for the Auto Cycle Union to select the trade men and the Motor Cycling Club the amateurs.

Third 1911 Monthly Meeting of the B.M.C.R.C.

THE above event was held at Brooklands on Wednesday, the 17th inst., in glorious weather. The first event was quite a novelty. It was known as the eliminating handicap, for motor cycles of any type, and fitted with any size engine. The race was run in heats of one lap each, the riders competing in pairs, and the winner of each pair in one heat competed in the next. The handicapping for the first heat was based on the results of a trial run, and for subsequent heats on competitors' times for previous heats. The object of this race was to do away with "hanging back," so often indulged in in trial runs, by handicapping the men on their actual performances. The result of the trial run was, as might have been expected, a procession, and Luce came in an easy first:

		M.	S.
1.	A. J. Luce (2-cyl. Bat-Jap)	2	47⅖
2.	V. J. Surridge (1 Rudge)	2	52⅘
3.	S. T. Tessier (2 Bat-Jap)	2	58⅘
4.	A. J. Sproston (1 Rudge)	2	58⅗
5.	W. L. T. Rhys (1 Triumph)	3	3⅕
6.	F. A. McNab (1 Trump-Jap)	3	5⅗
7.	A. B. White (1 Trump-Jap)	3	6⅕
8.	H. Martin (1 Martin-Jap)	3	9⅕
9.	W. H. Elce (1 Rudge)	3	22⅖

Chitty (Frays) had not his numbers on at the start, and was allowed a separate trial, but his belt broke a couple of hundred yards from the start.

Surridge and Tessier (5⅗s. start) were then drawn to run a bye. Tessier proved a winner. Time, 2m. 47⅘s. Sproston and Rhys then competed, Rhys coming in first. Time, 2m. 54⅘s. McNab and Baker-White afterwards ran, the latter romping in first. Time, 3m. 0⅘s. Elce and Martin next competed, and the former won. Time, 3m. 25⅕s. Tessier and Luce then tried conclusions, and Tessier again proved a victor, while Luce broke a belt owing to a broken pulley. Time, 2m. 42s. Elce and Baker-White and Tessier and Rhys were left in for the semi-final. Of these, Baker-White (time, 2m. 54⅕s.) and Rhys (time, 2m. 43⅗s.) were left in for the final. In the final, Rhys and Baker-White both suffered broken belts, but Rhys won the race. Time, 4m. 15s. Baker-White was second. Tessier and Elce as fastest losers competed for third place, but Elce failed to get under way, with the result that Tessier took third place.

The prizes were: First, gold medal; second, silver medal; third, bronze medal.

First 1911 Time Trials.

Next on the programme came the first 1911 time trials. During these attempts Sproston had a collision with another man in the paddock, and buckled his front wheel and cut his leg rather badly, while Martin cracked the cylinder of his 2¾ h.p. machine. The mile and kilometre times were taken electrically, while the five miles times were taken by hand. Major Lindsay Lloyd and Mr. A. V. Ebblewhite officiated. The results of the latter are given at foot:

Godfrey's splendid performance in the five miles proved t be a British record. The previous record was held by Georg A. Barnes (8 h.p. Buchet), July 14th, 1906. W. F. Newsom annexed the flying kilometre record held by V. Surridge fo less than a week.

W. T. L. Rhys (T.T. Triumph), whose speeds of 65.59 and 64.93 m.p.h. for the flying kilometre and mile are the best yet recorded by an amateur.

Certificates are issued for the best performance in each class, while the club's gold medal is awarded in each class for the best aggregate performance during the season.

A Keenly Contested Race.

Until the third event there had been nothing worth watching from a spectacular point of view, but the three-lap scratch race amply made up for the deficiency. It was for machines fitted with engines not exceeding 500 c.c. First prize, silver cup presented by the Palmer Tyre, Ltd.; second prize, silver medal; third prize, bronze medal. An excellent start was made, though Elce was rather slow in getting away.

At the end of the first lap Surridge and Newsome were practically level, while both shared the honour of covering a lap from a standing start in record time, 2m. 41⅘s. (60⅗

Rider and machine.	Bore and stroke. mm.	c.c.	Kilometre. Time. secs.	Kilometre. Speed. m.p.h.	Mile. Time. secs.	Mile. Speed. m.p.h.	Five Miles. Time. m. s.	Five Miles. Speed. m.p.h.
Class A, not exceeding 275 c.c.								
H. Martin (1-cyl. Martin-Jap)	76 × 59.5	270	35.77	62.54	57.93	62.14	5 1⅕	59.80
W. Chitty (1-cyl. Frays-Jap)	76 × 59.5	270	39.09	57.23	65.32	55.11	5 55	50.70
Class B, not exceeding 350 c.c.								
W. Chitty (1-cyl. Frays-Jap)	85.5 × 60	345	38.81	57.64	64.05	56.21	——	——
Class C, not exceeding 500 c.c.								
W. F. Newsome (1-cyl. Triumph) ...	85 × 88	499	33.70	66.38	55.02	65.43	4 41⅘	63.83
V. J. Surridge (1-cyl. Rudge)	85 × 88	499	34.17	65.46	55.06	65.38	4 36	65.22
W. L. T. Rhys (1-cyl. Triumph)	85 × 88	499	34.11	65.59	55.44	64.93	5 3	59.41
H. Martin (1-cyl. Martin-Jap)	85.5 × 60	345	34.96	63.99	57.08	63.07	——	——
F. A. McNab (1-cyl. Trump-Jap)	85.5 × 85	488	35.75	62.57	58.36	61.69	——	——
A. J. Sproston (1-cyl. Rudge)	85 × 88	499	38.80	57.65	62.88	57.25	5 10⅖	58.06
W. H. Elce (1-cyl. Rudge)	85 × 88	499	42.28	52.91	68.80	52.33	5 30⅖	54.35
Class D, not exceeding 750 c.c.								
S. T. Tessier (2-cyl. Bat-Jap)	76 × 64	580	29.89	74.74	49.28	73.05	4 18⅖	69.77
Class E, not exceeding 1,000 c.c.								
O. C. Godfrey (2-cyl. Indian)	82.5 × 93	994	27.86	80.29	44.89	80.20	3 54⅖	76.65

hird 1911 Monthly Meeting of the B.M.C.R.C.—

.p.h.). Rhys was third, while McNab, Sproston, Baker-hite, Meeten, Elce, and Roberts were a long way behind. was practically a ding-dong race all through between Sur-dge and Newsome. After the conclusion of the second lap rridge maintained his lead, with Newsome close behind. hys still kept third place, and the others passed the line the following order: McNab, Baker-White, Sproston, Elce, eeten, and Roberts.

In the last lap Surridge and Newsome had a tremendous ruggle, and at one time the latter was actually leading, ough the former eventually won. His second lap was vered in 2m. 28⅘s. (65.93 m.p.h.). Result:

Rider and machine.	Bore and stroke.	c.c.	Time. M. S.
V. J. Surridge (1 cyl. Rudge)...	85×88 ...	499 ...	7 41⅗
W. Newsome (1 cyl. Triumph)...	85×88 ...	499 ...	7 44
L. T. Rhys (1 cyl. Triumph) ...	85×88 ...	499 ...	

The remainder finished in the following order: A. Baker-hite (1 cyl. Trump-Jap), A. J. Sproston (1 cyl. Rudge), . H. Elce (1 cyl. Rudge), T. G. Meeten (1 cyl. Meeten-Jap), d B. Roberts (1 Bat-Jap). Surridge's average speed for e three laps is equal to 63½ m.p.h.

Some excellent flying was witnessed during the evening. e greatest attraction of which was the splendid perform e of Mr. Hubert Latham.

NOTTINGHAM SPEED TRIALS.

On Saturday, June 10th, the Nottingham and District C.C. has arranged some speed trials on the Clipstone ck, four events being restricted to club members. The n events are for lightweights, touring machines, T.T. chines, a scratch race, variably-geared machines, and a ies' race. Entry forms are obtainable from the hon. retary, Mr. J. King, 8, Shakespeare Street, Nottingham.

ILLUSTRATING A COMMON EXPRESSION "ALL OUT."

S. T. Tessier (Bat-Jap), who accomplished a speed of 74¾ miles per hour, using a twin-cylinder engine conforming to the 1911 T.T. regulations.

FORTHCOMING EVENTS.

O. C. Godfrey, (7 h.p. Indian), the only competitor in the big twin class the B.M.C.R.C. Time Trials. His best speed was 80.29 m.p.h. for the kilometre, mpared with C. R. Collier's record of 84.89 m.p.h. Godfrey captured the five ile record.

Shelsley Walsh Hill-climb.

SATURDAY, June 10th, is to be an important day in the annals of motor cycling, for a glance at our Future Events column will show that a number of competitions are down for decision on that day. The Birmingham M.C.C. open hill-climb, to be held at Shelsley Walsh, consists of three classes, as follows:

1. Standard touring motor cycles up to 560 c.c., single or twin. Variably-geared machines permissible.
2. Racing machines up to 560 c.c.
3. Open to all motor cycles whose cylinder capacity does not exceed 1,000 c.c.

Silver cups are offered to the winners of each event, and special medals for Birmingham club members. Entries close on the 3rd prox. Entry forms may be obtained from Mr. R. Vernon C. Brook, hon. sec., Oakdene, Cambridge Road, King's Heath.

Brooklands Meetings.

On Whit-Monday, June 5th, the Brooklands Automobile Racing Club will hold a series of three motor cycle races, particulars of which we give below.

1. The Second Short Motor Cycle Race. Distance, 5¾ miles.
2. The Second Long Motor Cycle Race. Distance, about 8½ miles.

The conditions governing both these races are exactly the same, and are for all classes of motor bicycles, starters barred. The first prize in each case to be a cup or 10 sovs. at option, second 5 sovs. or cup, and third 3 sovs. or cup.

The entrance fee for each event is 10s. 6d.

Introduction of Sidecar Races.

3. The First Motor Cycle Sidecar Race. Distance, 2½ miles.

This will be a handicap race for all classes of motor cycles fitted with sidecars.

Machines must be standard touring models.

Entrance 1 sov. (10s. 6d. if entrant has also entered for motor cycle events). The entrant of the winner and of the second and third to receive cups.

On Saturday, June 17th, the three events enumerated above will be repeated.

2557 MILES IN 6 DAYS

BY ALBERT E. CATT

The first instalment appeared in the last issue of "The Motor Cycle."

WEDNESDAY.—Route: London to Exeter, and back to London and on to Northampton. 428 miles.

Once again I was early astir and off again at 3.50 a.m. It was a miserable, damp morning, and bitterly cold. When I reached Bagshot I had to dismount and run beside the machine to restore circulation. Nothing of any importance occurred, and I reached the White Hart, Salisbury, at 7.20, where breakfast was waiting. My next stop was at Milborne Port to check at the Post Office, having then done over 1,000 miles. At Yeovil I was stopped by Mr. Williams, another record aspirant. He asked me how I was getting on, and I told him "all right." He explained that he was going to have a try for it, starting on Saturday, so, wishing him good luck, I left him. On arrival at Chard I opened the throttle and simply "hummed" up the renowned Chard Hill; the same can be said of Yarcombe.

The roads got very bad towards Exeter; they were all pot-holes and greasy. Some miles out I met friend Pike on a Humber, which travelled along at a good bat. I had my second breakfast at the Bude Hotel, Exeter, and checked at the Post Office. Mr. Pike once again accompanied me several miles out of Exeter, and he had not left me many minutes before a car came whizzing round a corner at a terrific speed, and missed me by a small margin. I was truly thankful to think that I always turn corners well in on the proper side. On reaching Yeovil, friend Williams was there again to see me pass through; he asked me how the engine was going and how I felt; I told him "all right." This was Wednesday, about two o'clock, and I told him that I had done over 1,000 miles, and if I had good luck until Saturday, it would keep a man busy to take the record from me.

Incessant Rain and Belt Trouble.

After leaving Yeovil I began to get weary of riding, so I stopped by the wayside and picked a nice bunch of primroses, which I thought my wife would be pleased with. The next stop was at the White Hart Hotel, Salisbury, for dinner. After restarting the rain came down in torrents, and the wind was very erratic. I arrived at Whitchurch and was checked in at the Post Office at 4.27. I had to shorten my belt at Basingstoke, and going up the hill at York Town, the belt broke again. I arrived at the Marble Arch at 7.18 p.m., where I checked and had tea. I was in an awful state and wet through, and nearly done up. A hasty tea and I was soon on my way again. It did not stop to rain in places, it simply fell down, and on my arrival at St. Albans I was obliged to shorten the belt again to get up the hill going into that town. I suppose I overdid it, because just before reaching the top bang went the belt again. So I pushed my machine into the Red Lion Hotel Garage, explained my mission to the young man in charge, and also to another gentleman, and told them I was about done, and I really didn't think I should get to Northampton. To this the young gentleman replied: "Go on, you'll do it, once you get in the saddle; I ride a Triumph. Stick it." And I did so.

All went well until about two miles from Northampton, when the belt broke again. I repaired it as quickly as I could, and arrived at 11.5 p.m. wet through to the skin. Before going to bed, I gave strict instructions that I was not to be called if it rained in the morning, because I should not do it. I had had enough of the bad weather in November, and I was not going through it in May. When I finished up on Wednesday I had been on the road about nineteen hours that day.

THURSDAY.—Route: Northampton to Holyhead and back. 407 miles.

I was called at 3.30, but I really could not get up and my request for another half-hour was granted. At 4 o'clock I said the same, but at 4.30 my friends begged of me to make a start; they said I should feel all right once I got going, and it was a fine morning. So I jumped up hastily, and was on the road at 4.48. After twenty-five miles I came to a level crossing gate, which was closed, and on putting my foot out to dismount my knee gave way, and off I fell, the machine on top of me. The petrol poured out of the tank all over my clothes, and I seemed practically helpless to lift the machine off for some minutes. The fact was I was fairly exhausted, but having a Thermos flask full of Oxo I drank three cups of it, boiling hot, and rested awhile before proceeding for a few more miles, when I had some more of this matchless corpse-reviver. With two or three more stops I managed to drag on to Shrewsbury where I had breakfast with Mr. Roberts and checked at the Post Office. I told my friend, Mr. Roberts, that if the Holyhead Road out of Shrewsbury was at all bad I should come back and give up, as I knew what that twisty road was like when it was greasy. Fortunately the roads were dry and the weather fine, so I pottered on.

On arriving at Menai Bridge I found Mr. Lomax waiting for me with his little twin Enfield. After we got going a remark on the nice running of his machine elicited the fact that "it was the fastest machine on the island." On coming to a piece of straight uphill road I asked him to open the throttle, which he did, and it turned out that it was the fastest machine until I got there. Of course, it must be understood, dear reader, that my machine was in perfect tune and on top gear, but I give him credit—his little machine could do its forty-five miles an hour. He accompanied me as far as Mr. Wild's Garage, Holyhead, where I arrived at 1.20. Arrangements had been made for my dinner to be prepared at the George Hotel, where I waited for some time, but as no meal

Miles in Six Days.—

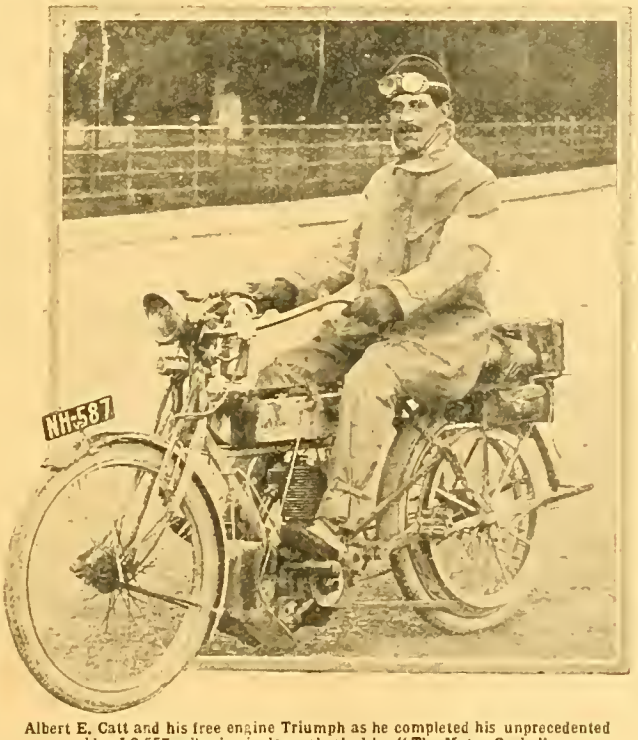
orthcoming I decided to go without and returned e garage for my machine. I bought a new gallon f petrol at Holyhead, as the vibration had worn e in the other one and caused it to leak.

. Wild was very annoyed that my meal had not prepared, and kindly offered to get me a nice or steak, but I could not wait, time being so ble. I had a hasty cup of tea and a slice of bread utter, and on this I travelled 208 miles.

Meet a Friend at Shrewsbury.

ween Holyhead and Bettws-y-Coed I had two ures; I was tired out and hungry, and was wish- had taken Wild's advice and had a good meal olyhead. I was checked again at Bettws- d at 3.25 by a ly motor cyclist, and at the Post Office, ollen. My next stop Shrewsbury, where I ed at the Post Office .50, also at Mr. rts's. I was aston- when I arrived at sbury to find that V. Barratt had come e way from North- n to meet me on a .p. Zenith. I was pleased indeed to his company for the 00 miles home, and a good, substantial r and tea together at sbury we were soon e road again.

er proceeding fifty- miles a nail went through Barratt's tyre, which caused nsiderable delay, as re was a new one and ery hard to get off . I assisted him the could, part of the natching a moment's n the grass at the side of the road. However, re soon on our way again to do the last forty-five to Northampton, where we safely arrived at ten es past eleven, the day's distance being 407 after 18h. 22m. on the road.



Albert E. Catt and his free engine Triumph as he completed his unprecedented ride of 2,557 miles in six days, checked by "The Motor Cycle."

DAY.—Route: Northampton to Dorchester nd Southampton, then *via* Towcester to unstable, Coventry, and back to North- mpton. 423 miles.

as early astir, but not so in starting; it was a r to five before I plucked up sufficient courage unt the machine, to which I might mention that I tted a new Dermatine belt the previous morning. first stop was at Salisbury, where I arrived at a.m., the waitresses and porters at the White being surprised to see that I was still going. leaving Salisbury, on a steep hill, four miles f Blandford, I encountered a tremendous flock of . Fortunately I was able to slip my clutch and my way through them. I had never seen such a large flock before, and on asking the man in charge how many there were, he replied, "There are exactly 1,000, sir." Had it not been for my clutch, I should have been delayed by this at least twenty minutes.

Result of Sudden Brake Application.

On entering Dorchester, the roads were a little greasy, and just inside the town a butcher's boy came out of a side street with a basket of meat on his cycle; on seeing me he applied the brakes suddenly and skidded, and his meat flew out in the road, whilst I ran over a nice little round of beef with both wheels. I stopped to see if the boy was hurt, but there was no damage done. A workman standing by remarked, "I bet that meat is tender now." At Dorchester I was checked by Mr. Lucas, and from there I made my way to Southampton.

Between Wimborne and Ringwood several members of the Southampton Motor Cycle Club had come out to meet me, and they brought me along at a lively bat to the Avenue Hotel, Southampton, where a nice dinner had been prepared. Outside Southampton we stopped to fill up with petrol, and I shortened my belt, which had done 720 miles without adjustment. The Southampton boys accompanied me a few miles to the other side of Winchester, where they bade me good-bye. On I went, through Whitchurch, Newbury, Abingdon, and Oxford. In the centre of Oxford the machine suddenly stopped. I tested the spark and found it correct, so I took out the plug and found a small piece of carbon had shorted the points. I had then covered 1,994 miles. Towcester was my next stop, and here I had tea at the Pomfret Hotel at 5.40 and checked at the Post Office. Tea over, on I went down the London Road to Dunstable—accompanied by Mr. W. Barratt on his Zenith. He came eighty-five miles with me on this day, and punctured again at one mile out of Coventry—where I checked at the Post Office. Back again through Daventry to Coventry, where some kind friends were waiting to see me enter the King's Head Hotel. A hasty supper, and I was soon off again, being accompanied to Northampton by Mr. Lloyd on another Triumph. We arrived safely at 11.15, I having covered 423 miles.

SATURDAY.—Route: Northampton to London and back before breakfast, 145 miles, to Norwich and back. Total 426 miles.

I was on the road at 4.12, accompanied by Mr. Michaels on his Triumph, and was checked in at the Old Gate House, Highgate, at 7 o'clock, also at the dining rooms close by, where I had a hasty breakfast,

2,557 Miles in Six Days.—

and on my way back I stopped at the Salisbury Hotel, Barnet, and pushed my photograph—on the back of which I wrote the words, "Saturday morning, and I am still going"—into the letter box. I reached Northampton at 9.45. After a hurried breakfast I started again with Mr. Michaels, who, unfortunately, punctured a few miles out, and I saw no more of him until my return. My first check was at Hitchin Post Office at 11.40. On again to Elveden, near Thetford, where I checked again at 1.48. My next stop was at Ponder's refreshment rooms, Attleborough, at 2.15 p.m., where I partook of a hasty dinner and was soon on my way again for Yarmouth. On arriving at Norwich I was partly dazed and tired out, and did not relish the traffic and narrow streets, so elected to leave out the Yarmouth journey. I checked at the G.P.O. at 3.15 and returned to Attleborough.

The Effects of Continual Riding.

My next stop was at Mr. Lambert's, motor engineer, Thetford. On I went to Newmarket, where I checked at the Post Office at 6.30. On my arrival at Royston I was surprised to find that Mr. Osborn and Mr. W. Barratt had come nearly sixty miles to meet me and accompany me home, but one of them had got a puncture, and the other's lamp would not burn, so I dismounted and waited some minutes for them. On dismounting I found that I could hardly stand, the vibration from the footrests had made my feet swell so much. My friends soon got going, and accompanied me about twenty-five miles, when I suddenly found they were missing. I felt too tired and exhausted to wait about for them, so I continued. At Bedford I called upon Mr. Crawley to supply me with petrol, but I was too tired to put my hand in my pocket to pay for it. He said, "It's all right, old boy, you have only got twenty-one miles to do," so I slipped the clutch in and arrived at Northam at 10 o'clock, and was received by the Mayor (M Yarde), several members of the Corporation, thousands of enthusiastic folks.

Afterthoughts.

Whoever has the pleasure of taking this re from me can have the honour of holding it as fa I am concerned, for nothing would induce me undertake such a ride again, so badly did the tinuous riding make my hands, feet, and neck s

Before I finish my story there are a few intere matters I should like to point out. In the bad wea the first three days my belt broke five times in r miles. The belt I fitted of the same make on T day carried me 1,256 miles with one adjustment, showing the effect the wet weather has on belts.

I was very unlucky as regards punctures the two days, but the other four I was most fortunat carried a spare gallon can of petrol on my carrier no maps throughout the run, and only missed way once, although I travelled nearly 2,200 unaccompanied.

The last three days of the ride many motor cy I met *en route* acknowledged me as they passed doubt they had read of my attempt in journal. *En route* I despatched about eighty and telegrams, most of which are in the posse of the Editor of *The Motor Cycle*.

[Mr. Catt's interesting account of his wonderful has doubtless been read very keenly. As play such an important part in a record, we it is due to the makers of the Clincher tyr point out that Catt was most unfortunate punctures due to glass and nails at the comm ment of his ride, although for four days he ex enced no trouble. Catt's original record of miles in six days—also on Clinchers—was ac plished without even using an inflator.—ED.]

DAILY ITINERARY OF ALBERT E. CATT'S LONG-DISTANCE RECORD OF 2,557 MILES IN SIX DAYS.

Date.	Route.	Time of Departure.	Time of Arrival.	Speedometer Registered.	Distance Covered. By Speedometer.	Distance Covered. By Schedule	Postcards and Telegrams wer received by *The Motor Cycle* fro
May 1	Northampton to Highgate, Highgate to Edinburgh	Soon after midnight	10.45 p.m.	At start 9615 At finish 10076	461	458	Northampton, Highgate, Hit Grantham, Doncaster, Piercebr Newcastle-on-Tyne, and Edinb
May 2	Edinburgh to Highgate .... (Newark to Lincoln omitted.)	3.20 a.m.	10.45 p.m.	At start 10076 At finish 10488	412	424	Edinburgh (2), Newcastle-on-T Ferrybridge, Grantham, Hit and Barnet.
May 3	Highgate to Exeter, to Marble Arch, to Northampton	3.50 a.m.	Abt 11 p.m.	At start 10488 At finish 10916	428	412	High Barnet, Salisbury, Ex London, W., and Northampto
May 4	Northampton to Holyhead, to Northampton	4.48 a.m.	11.10 p.m.	At start 10916 At finish 11323	407	410	Northampton, Shrewsbury, H head, Bettws-y-Coed.
May 5	Northampton to Salisbury, Dorchester, Southampton, Oxford, Towcester, Dunstable, Coventry, Towcester, and Northampton	4.45 a.m.	11.15 p.m.	At start 11323 At finish 11746	423	427	Northampton, Salisbury, Dorche Southampton, Towcester.
May 6	Northampton to London *via* Weedon, to Northampton, to Hitchin, Norwich, to Northampton (Yarmouth omitted)	4.12 a.m.	10.3 p.m.	At start 11746 At finish 12272	426	438	Northampton, Highgate, Hit Attleborough, and Thetford.
				TOTAL	2557	2569	

OCCASIONAL COMMENTS.

By "IXION."

Pinhole Punctures.

Many suggestions are to hand in response to my uest for tips as to locating pinhole punctures. One ius recommends me to carry a portable folding tent l a good microscope on the carrier, saying he has d every other method, and this alone is satisfactory. other advises filling the lungs with tobacco smoke, l breathing it in through the valve. A third says injection of Reckitt's blue through the valve is ; a fourth is evidently a jingo, for he revises this to read, "Dye French chalk with red ink, dry out n oven, and inject through valve"; a fifth suggests uncture-sealing compound. Last, but not least, all leading tyre companies write to enquire if "Ixion" *ever* heard of butt-ended tubes.

Many thanks, gentlemen all! I should like some e evidence on the subject of puncture-sealing com- nds. I once ruined two sound tubes by putting a e of stuff resembling green sausage meat in them; failed to seal punctures as advertised, but it eeded in nullifying the adhesive properties of y solution on the market, and when I called to rview its vendor with a long car tyre lever, he had no address. Hence I am rather "didymous" on question.

Lightweights in Hill-climbs.

That strikes me most about the miniature classes in 1911 hill-climbs is the tremendous speed some of trade riders can get out of a 2¾ h.p. in its class. y scoot up our steepest hills in a style which would have disgraced the 3½ h.p. two or three years Secondly, it strikes me as rather hard lines that genuine lightweight, which was once the standard l in the class, has normally to compete against hines surpassing it in weight by as much as 60 lbs. in power by 1½ h.p. at least. The pseudo light- ht romps up the hill without an atom of l.p.a. at od round bat; the genuine article—the 80 lbs. h.p.—toils up laboriously at one tick a minute in pedals-barred classes, and goes up faster, though piringly and rockily, in the pedalling-permitted s, thanks to a rider with muscular calves and a n. pedalling gear.

strikes me as rather dubious policy to enter these ine lightweights for climbs up the worse precipices. true that with a son of Anak in the saddle and a strous chain wheel they can make sure of the ula medals, and the announcements of such esses look splendid in an advertisement. But all sundry gathered on the hill itself at the moment e climb resolve that nothing would induce them wn or ride such a machine.

see that the lilliputian engines are now more monly provided with multi-speed hubs, which, of se, tends to eliminate l.p.a. In the meantime I k the single-geared 2 h.p. should either be given ass all to itself, or barred from competing up y steep gradients. It does the lightweight cause ood when a machine is forced up a phenomenal e by a perspiring rider with a vermilion face and lling-out tongue, even if the climb does secure a medal. Certain wobbles on Kop Hill this year been fearsome to see.

Cui Bono?

Again, does anybody seriously imagine that the modern passenger class at a hill-climb helps either the pastime or the industry? After the singles have gone up, an exceptional dust cloud proclaims the thunderous approach of a big racing twin with a rickety little sidecar attached. The sidecar is pared down to the narrowest limits—ere long we shall see one out consisting of a push-bicycle saddle gummed to a skeleton frame. The passenger is invisible, for he is lying out behind his driver over the tail of the rear guard. The whole outfit is leaping and bounding on the rough road at a furious pace like an ibex on a moraine, and every potential sidecarist or sidecarist's sweetheart on the hill heaves a mighty sigh, and resolves never to be tempted by the persuasive agent at home.

We are apt to forget that two or three thousand spectators are often present at our hill-climbs, and that their impressions are deep and abiding, also that they convey these impressions to others. It would surely aid development better and procure a much more pointed advertisement if the conditions of passenger hill-climbs were altogether remodelled on more practical lines. Personally I should like to see the medals awarded, if not for the slowest climb, at any rate on a flexibility basis, and, above all, every sidecar climb should include a restarting test.

Every tourist knows that the capacity to restart on a gradient is the first essential of a really practical outfit appealing to the average rider, and it is notorious that many of the winning outfits could not restart on quite insignificant gradients except by a combination of marvellous muscle and gymnastics.

N. D. Slatter (2 h.p. Alcyon), second on time and formula in the Lightweight Class of the S.E. London M.C.C. hill-climb. (See page 501 of last issue.)

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Timing a Magneto.

Could you tell me the correct way to time the magneto of a 1908 Triumph? I have lately had a bush put in the driving side of magneto. The mechanic tells me it ought to be fully retarded with points about to break when piston is dead on top of firing stroke. I find this is not right, as I have tried timing it that way, and find by so doing that it will not take advance more than halfway from being fully retarded. The only way it seems to work best is by setting the piston dead on top of firing stroke retard from full advance three notches, with points about to break. Please tell me if this is correct (it is a Bosch magneto), or let me know if you think anything is wrong with the magneto. There is a ¼in. spark, and it appears to be all right.—W.E.F.

The proper instructions are that the lever should be fully retarded and the magneto so set that the points are about to break when the piston is on the top dead centre of the compression stroke. We have placed this query before the Bosch Co., and they inform us that the foregoing is absolutely correct, and suggest that the fault may possibly be due to the fact that the platinum points separate too widely. The separation should not be more than half a millimetre. If you still find the firing too far advanced, you might set the points to break with piston ⅛in. down from the top of the cylinder on the firing stroke. Try a new fibre ring.

Lubrication. Carbon Deposit.

(1.) How would you advise me to oil my magneto? There is a cavity disclosed by a draw plate on the chain wheel side. How much oil should I put there? (2.) On removing the cylinder from my 3½ h.p. Peugeot I found an excessive quantity of carbon deposit. Is this caused by paraffin injections for starting, and will it improve matters if I use petrol instead?—A.B.J.

(1.) You should put a few drops of oil out of an oilcan into this lubricator about every four or five hundred miles. (2.) This is due to the carbonisation of oil and the accumulation of road grit. It has little to do with paraffin injection. Not enough is injected to cause serious carbonisation. Do not use much petrol, as it cleanses away the oil from the piston too thoroughly.

Water-cooled Exhaust Valve Cap.

Could you tell me if (1) water-cooled exhaust valve c is liable to crack the cylinde (2.) Would it be advisable make it of a more expansi metal than cast iron, so that, bei at a cooler temperature, the expansi of the cylinder and the cap mig be equal? (3.) What metal would the most suitable?—M.R.P.

We do not think a water-cooled exhau valve cap would crack the cylinder there were no leakage, but there wou be great difficulty in keeping the wat in so restricted a place, where t temperature is so great. It would tu instantly into steam, unless a lar volume of water were carried and proper radiator fitted. It would far better to water-cool the cylind entirely. If you wish to try the expe ment, brass would probably be mo suitable than any other metal.

Sluggishness in Starting.

I have a 2¼ h.p. Moto-Re and I have considerable troul in starting. On the stand starts with a rush after vigo ous action with pedals, th suddenly stops. After four or fi of such stops the machine starts a roars off. (1.) Do you think this due to injecting petrol at starting or imperfect and insufficient lubricatio (2.) Would it be due to a stoppage the pipe? or (3) incorrect float adjus ment? (4.) Can you tell me the corre method of grinding in valves? (5.) an increase of power obtained enlarging exhaust by adjustable tappe and what are the limitations? (6.) Ho can I adjust petrol level in the M. semi-automatic carburetter? (7.) Whi are the best butt-ended tubes—with without free air circulation?—N.O.

(1 and 2.) We should say that t trouble is due to a partial obstruction the carburetter. It is not due to injec ing petrol or to insufficient lubricatio (3.) It is unlikely that the float is n correctly adjusted. (4, 5, and 6.) Wit regard to adjusting the float and carb retter generally and grinding in t valves, we must refer you to our han book, "Motor Cycles and How to Manag Them," which can be obtained, pri Is. 2d. post free, from these offices. (7 In actual practice it does not seem t make much difference whether the but ended tubes have free air circulatio or not.

Gainsborough M.C.C. Hill-climb. A rider of a 3½ h.p. Premier making a good ascent. (See Club News).

South Wales to Edinburgh.

(1.) Kindly give me the best route to Edinburgh from here. (2.) What horse-power would be necessary for such a journey with a sidecar attachment?—I.C.T. (St. Clears).

Your best route would be as follows: Clears, Carmarthen, Llandilo, Llanelly, Llandovery, Brecon, Calgarth, Builth, Willersley, Leominster, then strike Ludlow, going through Ludlow, Church Stretton, Shrewsbury, Wem, Whitchurch, Nantwich, Warrington, Wigan, Preston, Lancaster, Kendal, Penrith, Carlisle, Langholm, Hawick, Galashiels, Tranent, Haddington, Edinburgh, or Carlisle, Beattock, Abington, Edinburgh. The total distance by the direct route would be approximately 388 miles. The route given above is the most direct, but by it the manufacturing districts of Lancashire cannot be avoided. To avoid these you must take a far more circuitous route, going through Hereford, Ledbury, Tewkesbury, Evesham, Stratford, Warwick, Coventry, Leicester, Nottingham, joining the Great North Road near Doncaster. Continuing up the Great North Road to Scotch Corner, and go from there direct to Edinburgh by the main road. (2.) We would recommend a machine of about 5 h.p. with two-speed gear, if you are going to take a sidecar.

Faulty Compression.

I have a copy of your useful handbook, "Motor Cycles and How to Manage Them." I have, as advised by your book, bought a second-hand machine. It is a 3½ h.p. single-cylinder N.S.U., of 1909 model. The control is by levers beside the petrol tank, and ignition is by accumulator and trembler coil. I have had one or two runs on it, and when started it seems to go all right. But lately I have had some difficulty in starting. I find the carburetter is all right, and the plug sparks well in the open. What I cannot understand is that the compression is fine when I push the pedal down slowly (takes my weight for a minute or so without shifting), but when I work the pedals from the saddle to get an explosion, I release the exhaust valve lifter, and instead of either an explosion taking place or the compression bringing foot up dead, I push pedal just the same with no explosion. Should it do this or not? If not, will you please tell me what is wrong? The throttle is well open and the spark advanced as far as it will go, and the valve lifter springs back into place when released, but the valve seems to continue to work. I know there is a good mixture, because I can smell it.—H.D.C.

The compression does not appear to be very good, but you must bear in mind that when you are travelling at a good speed the compression acts more as a cushion, and has not so much braking effect. Are you careful to close the air lever before starting? To us, the trouble seems to be due to the ignition, and we should therefore advise you to overhaul the electrical parts carefully. Probably slight readjustment of the contact-breaker screw would help matters. If by any chance you can get hold of a magneto ignited engine, or fit a magneto to your present engine, you would have far less trouble.

Experiences with a Second-hand.

I bought a second-hand Kerry motor cycle, which ran well for a time, but through my ignorance of the working it stopped, and for some time I could not get it to go. Now, with perseverance, I have got the machine to go, but just the reverse has happened, it won't stop. I cleaned out the silencer, exhaust pipe, etc., but the engine gets very hot after about thirty explosions, and even when I switch off the current and pull out the brass connection in the handle-bar it still keeps on, and I have to stop by raising the exhaust lifter. What is the trouble?—B.B.

You have given us rather a difficult problem to solve. Probably the throttle leaks and allows enough mixture to get through to propel the machine with the throttle closed, though probably you could stop if you opened the air. A short circuit in the switch and plug connection would cause the symptoms you speak of, so would carbon deposit (which you say you have removed), and a sparking plug the points of which projected too far into the cylinder and became incandescent. Engines that have got very hot have often been known to run for a short time on lubricating oil!

READERS' REPLIES.

Reducing Compression Ratio.

In your excellent paper, which I have read ever since I took up the pastime, I noticed in the issue of the 11th inst. a query regarding reducing compression ratios on a 1909 Triumph. Perhaps my experience on a 1908 model might be of some assistance to "F.C." I bought this year a second-hand 1908 Triumph, and found that the high compression was a great inconvenience to town and slow running. The machine was very hard to start on a greasy road, and inclined to knock when picking up. I first thought of fitting a dome over the exhaust valve in the cylinder head, but as I did not like the idea of an extra pocket, as it were, for the gas, I placed two flat zinc plates each 1-24th of an inch thick under the cylinder, putting good brown paper washers between each plate and above and below. To make the valve stems the right length I made two valve extensions, and case-hardened them after first fitting them and filing away to get the correct clearance. I find that the engine goes quite fast enough for me. I have got fifty out of it, and it climbs hills just as well as before. Of course, reducing the compression, as you say in your note, does reduce the general efficiency, but in my belief it reduces the wear and tear.—F.A.C. (Dublin).

Lubrication of 2¼ h.p. New Hudson.

Re your answer to "F.W.C.," page 442, May 4th, I had similar trouble. He will find half a pumpful of Vacuum A every ten miles ample.—A. Howie Muir.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"W.S.L." (Oundle). T.A.C. and sidecar, also 8 h.p. Bat and sidecar, particularly as to running cost and reliability.

"A.H.A." (Hessle). Binks two-jet and Scott Robinson automatic carburetters on a Triumph motor bicycle.

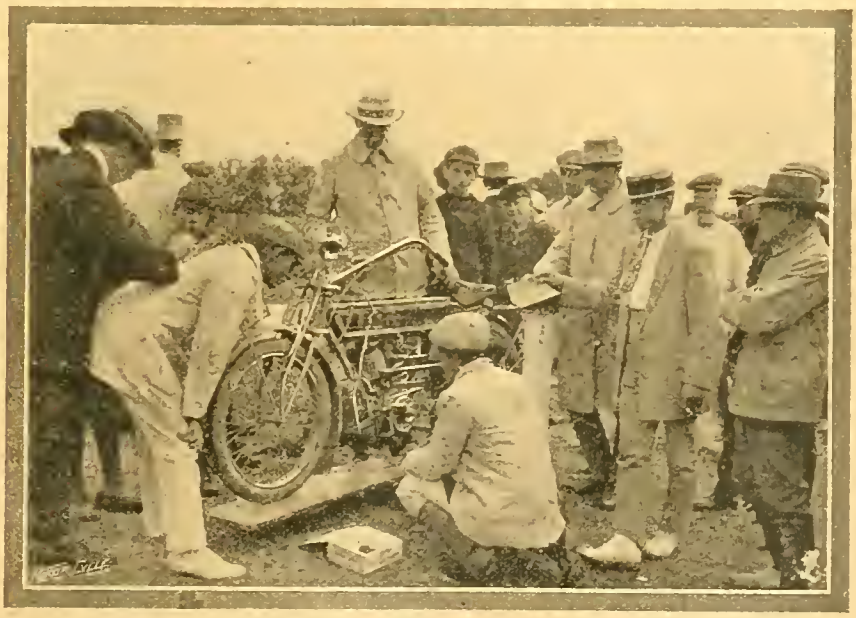
"R.T.A.H." (Winchester). F.N. four-cylinder, reliability, hill-climbing, desirability of change-speed gear, petrol consumption, and lubrication.

"A.M." (Reading). Zenith-Gradua, also Ariel fitted with variable gear.

"W.R.P." (Manchester). The Lincoln Elk motor bicycle.

"P.J.C." (Alexandria, N.B.) 5 h.p. Indian, with regard to flexibility, consumption, and control.

"S.H." (Croydon). ⅜in. Lyso belts.



MOTOR CYCLE CLUB OF SOUTH AUSTRALIA HILL-CLIMBING CONTEST.
C. A. Hepworth, a sixteen stone rider of a 6 h.p. Matchless-Jap, on the scales.

RECOLLECTIONS OF AN IRISH TOUR.

THE delivery of a new season's model of the 3½ h.p. Ariel induced me to compare it with a machine that emanated from the same works in the early days of this century, when the Components firm was pioneering the petrol cycle.

I am amazed at the audacity with which we put the machines of those days to such severe trials as we did. We would not put such stupendous faith in them to-day. In them we placed abounding trust, for our ignorance of what future motor cycles would be like was blissful.

Let me recall one never-to-be-forgotten tour on that Ariel, which took us over thousands of miles in England, Wales, and Ireland. The Hibernian trip was one long round of "episodes"—which, as usual with all cyclists, begin to look humorous now that the passing years are improving the perspective. But as I handle my thumb-marked road books (ex Mecredy and the C.T.C.), I wonder at what was very nearly intrepidity. We towed a tandem bicycle for most of the tour. For part of the trip the tandem towed me. Of that more anon.

An Irish Fair.

Somewhere between Youghal and Cork we were bowling merrily along when we suddenly plunged into a small town of the usual one-long-street type; there was a fair on, and before I could pull up we were in the midst of countless horses, donkeys, carts, and lurid words. Pandemonium prevailed in a twinkling; Irish humour gave place to hot temper. Rosa Bonheur might have revelled in the gay prancing beasts, but we felt rather in a den of lions, and to this day I marvel how my motor with the tandem in tow wriggled out of the riot.

Near Killarney I disturbed the peace of a mule standing near a village shop. His Muleship pricked up his aural flappers at the sound of the motor, and made for the shop where his owner was. Unfortunately the cart shafts were too wide for the shop doorway; the vehicle rebounded, and in a trice there was the mule dancing a fandango on his hind legs. The modern beast of burden is trained in the way he should go, and that is to be quiet when he hears the throb of the petrol engine.

Leaving Cork on a gorgeous day, we had not travelled far when we overtook a couple of carts hitched up together, the rear one overlapping the first, and the moment the moke which was drawing the two carts along heard us he stopped dead, with the result that the three occupants suddenly found themselves pitchforked into the bottom of the first cart. It was a case of Three men in a boat—new rendering.

An Irish Yankeephobe.

I set out for a short run alone one morning to Silver Mines, and started some big game—not pheasant nor hare, nor yet porker, but an unbridled horse; he was into his stride like lightning, and as I expected him to turn into a field somewhere I simply followed him. It was a great race. Unfortunately, however, I saw that the road circled round some fields, and across these there raced a man with a magnificent shillelagh, the blackthorn and the man's attire looking as if they had just jumped from a picture. He headed his horse at the road end—and made me stop also.

Quoth he, "Be ye one of the American devils?"

"Nay," said I, "I am from Lancashire."

"An' a good job for ye," he replied. "Shake."

We gripped one another's hands; I kept the corner of one eye on the villainous knobs of the stick and the other on my bicycle; I thought of kith and kin and my loneliness; and then—

"Shure, and it's a good job ye aren't an American the hateful craythurs."

I gave him some spirit—not petrol—and the best of friends we parted.

I was alone, too, when my petrol gave out; but I still remember with cordiality how a Mr. Jackson, the owner of a large house in the neighbourhood of Kildare—himself the owner of two motor cycles—played the part of Good Samaritan. He got his man to replenish my tanks, added a supply of lubricant, and helped me out of a tight corner generally.

No More Accumulators.

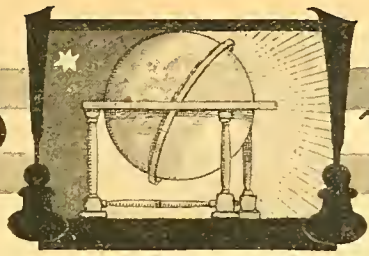
But this was not the end of the trouble—another mule backed into a gateway when I presumed to ask the driver the way; and as the "gintleman" seemed annoyed, I advanced spark whilst his cart retarded, so to speak. Was it mean? If so, I got my reward, for when seventy miles from Killarney both of my accumulators were found to have run out, and over those weary miles I partly pushed the lumbering machine and it luggage, at times I was towed; not a recharging station could we hear of anywhere till we made Killarney.

However, the magneto on the new arrival will avoid that contingency next June. There are other details that one might write of also—technical matters, of course, but of great import to the touring motor cyclist.

S.L.

The comfortable and natural riding position afforded by a modern motor bicycle is well illustrated in the above photograph, showing a rider of a 3½ h.p. B.S.A. machine. This comparatively new make is rapidly gaining favour in all districts.

LETTERS TO THE EDITOR



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Interchangeability of Tyres.

[5620.]—I was interested in reading the opinions regarding interchangeability of tyres. It seems to me to be a scandalous state of things that there is no standardisation of the diameter over the bead of various makes of tyres and rims. How or why motor cycle manufacturers have put up with this state of things I don't know, but I think the sooner they give the rubber companies to understand that tyres have got to be made to a standard diameter across the bead, the better it will be for all concerned.

F.W.M.

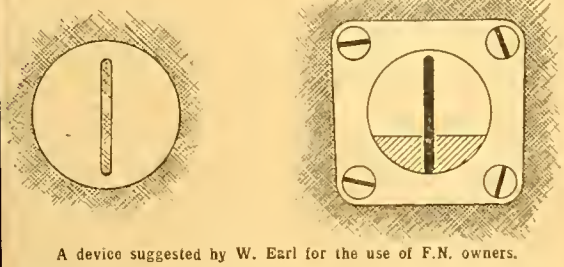
An Act of Injustice.

[5621.]—In reply to the above, No. 5581, I cannot conceive how Mr. Jas. Edgcombe can be held responsible for the damage to the horse, as the farmer admits that it was not his machine which startled the horse, and his friend will be able to stand as witness. I should be personally inclined to think that it was he (Mr. Jas. Edgcombe) who should claim for personal injuries and damage to the machine. Mr. Edgcombe does not, however, state at what speed he himself was travelling. The injustice as anticipated will surely not come to the realisation under the circumstances.

ARTHUR F. JOHNSON.

A Hint for F.N. Users.

[5622.]—The adjoining sketches show a simple device to enable users of F.N. motor cycles to know the exact quantity of lubricating oil in the crank case of the engine. The only addition to the ordinary gauge is a disc of aluminium or tin cut like the sketch on the left, and



A device suggested by W. Earl for the use of F.N. owners.

inserted behind the mica inspection window with a leather washer between them to act as a distance piece and form an oil-tight joint at the same time. The result is that the oil comes through the slot in the plate and lies in front of it in a thin film as shown in the shaded portion of the right hand sketch. This film will rise and fall according to the quantity of oil in the crank case. Anyone who has tried to read the quantity of oil behind the ordinary gauge will only to try this device to realise what a great improvement the disc is.

WILLIAM EARL.

A Wrong Impression.

[5623.]—I should like to correct an impression that, as someone has put it, "I have decided to let motor cycling and competitions severely alone," "for my health's sake," "leaving it to the young ones," etc.

This impression has doubtless arisen from the fact that for some six or seven months—since the Streatham hill-climb, in fact—I have been incapacitated for riding by an injury to my shoulder and arm, sustained on Snaefell during last T.T. week. As to motor cycling detrimentally affecting my health, although not in the first bloom of youth, I am never better than when riding. Usually suffering from insomnia and nerves, after a run I almost invariably sleep well, and can certainly recommend motor cycling as beneficial to one's general health. Contrary to giving up, my efforts are aimed at getting flexibility of the injured members in time to enable me to compete in the T.T.

JAS. L. NORTON.

An Amateur Open Hill-climb Suggested.

[5624.]—Why not an amateur open hill-climbing competition? On looking at the results on formula in Division A of the Herts County open hill-climb on the 6th inst., we find that every first place has been won by a trade man, every second place likewise, and every third, except in Classes 5 and 7. Now it seems to me that it is pretty nearly hopeless for an amateur to enter for an open hill-climb with a view to gaining a prize. I am sure that if a club were to promote an open hill-climb for amateurs only, it would have no cause to say that entries were lacking. An entrant would, of course, have to sign a form to the effect that his machine was entirely his own property, and he was in no way connected with the makers of it.

Will some club take up this scheme?

KOP HILL.

The End-to-end Record.

[5625.] I notice in "Ixion's" comments of May 4th that a "well-known rider intends to make a fierce assault on the existing End-to-end figures," also that a few other gentlemen intend to "go for" the six days' record mileage.

As one who has had to suffer both in person and pocket on account of one of these speed men, I feel constrained to put in my protest against anything of the sort being allowed or countenanced. Surely the spectacle of half a dozen riders tearing along the public roads, riding something little slower than express engines, can do nothing but injury to the sport, and in the near future bring about some drastic legislation for our undoing. We are looked at as it is with none too friendly an eye by the general public. Here in Devon we have never been unduly troubled by the police—indeed, they have been most considerate but several "regrettable incidents" have recently taken place, and in one of these I was involved through the fault of another: should any more of the same sort occur the police will be obliged to take action, to the undoing of the hundreds of ordinary motor cyclists who reside in or visit our county.

Now, I give warning to these speedy ones, I do not intend anything such as they contemplate to take place without endeavouring to get them punished for their law-breaking, and they may now learn I have written to the Chief Constables of both Devon and Cornwall, and given them warning that such an attempt is contemplated, together with the roads likely to be used, after entering Devon, to the Land's End, and as near as possible the times, either from Scotland to here, or the reverse.

Every year brings hundreds of recruits to the sport, and if "blinding" is not repressed with a firm hand we shall all suffer for the sins of the few.

I forgot to mention I gave the authorities the already existing figures for the whole run, and asked them to imagine the speed on the open roads.

I am also aware that when the inevitable accident does come, if the thing is not stopped now, it will be made to appear that it is an ordinary accident and the record business carefully suppressed, and then we are all involved.

JAS. EDGCOMBE.

Balancing of V Twin Engines.

[5626.]—I was very much interested in the article by "Winkie," "Balancing of V Twins," and took down my engine, a 1910 twin. I found one piston weighed 2½ lbs. I then wedged a piece of wood between the bob weight and shaft, and at the same radius hung weights, and found it took fully 5 lbs. to balance, *i.e.*, I had fully 2½ lbs. to remove. I hardly liked to take away such a lot, but as my free engine had always vibrated a lot, and I had great confidence in your article, I thought I would. I had to drill four ¾in. holes through each fly-wheel as near the rim as I thought safe to get a balance, and I am pleased to say that the result is most satisfactory, there now being hardly any vibration. Of course, I did not have to remove 2½ lbs. of actual metal, but about 12 ozs., which at the larger radius I drilled the holes was equal to 2½ lbs. at the radius of the crank pin. T. K. BOWLEY.

Riders' Weights.

[5627.]—The recent editorial dealing with riders' weights in the T.T. races calls attention to a matter which, while not serious enough to put the motor cycling world into a panic, demands, I think, some explanation. There are comparatively few contests and circumstances in which the lightweight man has not an advantage over heavier competitors. Of course, the imagination can bring up instances where a light man would be in an unenviable position, but the proportion of such instances is so small as not to be worth thinking of. What a heavyweight can do a lightweight can do, and a little more. And it is easy to understand why.

It would be rather difficult, perhaps, to try and make lightweight men bring themselves somehow up to a certain weight. Neither is it likely that 12 stone men would train like jockeys in order to become 11 stone men. Personally, I would bar the very light men altogether. The authorities might well fix a lightweight limit. Heavyweight men are not inclined to be heavier than they already are. Certainly, something should be done to make chances more equal. Observe what a scientific method there is in horse-racing to ensure that one horse may not have the "pull" over another. The best horse wins. Can the same be said of motor bicycles? J. F. WHITE.

Clutches and Variable Speed Gears.

[5628.]—I regret that "Chain Drive" has not found the multiple plate clutch a success in his hands, especially as he claims that he invested in this particular model as the result of reading my experiences with it.

If he only follows the simple instructions published by the makers, he will find it do all that is claimed for it.

For the past five months I have driven daily with one of these clutches fitted to my machine, and I can honestly claim that it has not given me one moment's trouble, beyond lubrication and an occasional adjustment (a two-minute job), which I have not found necessary to make on the road. On a recent Friday I drove from Sheffield to the South of London and back, nearly four hundred miles, which distance I covered, as with all my journeys to date, without putting a tool near the machine.

When one considers the ease and quickness with which the clutch can be adjusted, I do not think that "Chain Drive" has cause to kick at making three adjustments in six hundred miles, although one, correctly made, would no doubt have sufficed.

On account of the speed and road shocks, motor cycles need more attention than sewing machines, and if more riders realised this there would be far fewer complaints.

ERNEST FRASETTI.

Hill-climbing.

[5629.]—I have been a constant reader of your paper for some considerable time, and have followed with great interest the correspondence and articles dealing with hill-climbing competitions, and I am forced to put a query with regard to this particular form of competition. In and around Belfast we have, as in many other cross-Channel centres, numerous hill-climbing competitions, but never yet have these competitions been held on what could be considered a proper hill. I consider that a hill-climbing competition should be held on a hill which all machines could not mount, instead of machines being raced over a slight incline, and whoever secures the best time is considered the winner (?).

No doubt you will agree with me that there are many excellent motor bicycles on the market which are demons at pulling, but when speed is required they are amongst the "also rans." I happen to know some of the steep hills in England, on which competitions have within recent months been held, but none of these hills could compare with one which we have, about ten miles from the Giant's Causeway, in the county of Antrim. It is known as Knocksaughey, within a few minutes' walk from the Carrick-a-Rade Bridge. The gradient of this hill is 1 in 3½, and it is five furlongs in length.

I am assured by the residents of the district that until Good Friday last it never was negotiated by a motor cycle. On that date Mr. William Kerney, hon. secretary of the Belfast and District M.C.C., took his 3½ h.p. Premier and sidecar with myself as passenger over it. This I consider you will acknowledge was a feat of considerable importance, the combined weight of the rider and passenger being twenty-four stones. Since then I have ridden my 1911 single-speed 3½ h.p. Rex successfully over the hill in question. I feel sure that English tourists who may be crossing to Ireland with their motor bicycles would like to pay this particular district a visit, and give their machines a test on the hill mentioned. SAMUEL J. DORMAN.

A Reply to Rev. H. Horton.

[5630.]—In reply to letter No. 5600, I must plead guilty to a misstatement of the facts of Mr. Percy's ascent of Stentiford's Hill. My information came from a motor cyclist who was a witness of the climb. My own gear "may have been 5⅞ to 1," Mr. Horton, but it was not. It was 4⅞-1, and I climbed the hill without having seen any part of it before, not even the corner at the bottom. In support of my statement that Stentiford's Hill is not a main road, I may say that in the account of the first climb of the hill, which appeared in *The Motor Cycle*, it was described as "a short cut past some quarries."

A. C. HARDY.

[This correspondence is now closed.—ED.]

Starting Motor Cycle Engines.

[5631.]—Referring to the oft repeated queries that one sees as to the difficulty in starting motor cycle engines by a starting handle, I will try and explain why this is.

To begin with, the low tension magneto as applied to motor car engines always had a bad name for being difficult to start. I know one gentleman in particular who had a Mors car, and it was quite impossible for the average man to start it, and the owner, who was well informed on motor matters, repeatedly told me that he would have to get a high tension magneto. My idea was that it was not the magneto that was at fault, but simply a question of the choke tube round the jet being too large, and whereas he contended that the motor had to be mangled at a tremendous speed to create a spark, my contention was that the quick turning was necessary to get a sufficient rush of air past the jet to enable the incoming air to be carburetted sufficiently. I emphasise this fact, as the gentleman referred to was particularly well informed, and had been a motorist for years. However; I at last persuaded him to let me fit a two-jet carburetter, I taking the entire responsibility as to it removing the starting troubles, and I remember when this carburetter was fitted the owner stood by with an "I told you so" expression on his face, but very greatly to his surprise the engine started up at once with a sharp crank over.

Now the same thing applies to motor cycle engines. In order to get them to give the utmost power possible a very large choke tube is fitted, and, of course, when the engine is turning round by the belt, it is turned much faster than can be done with the starting handle, consequently attempts to start the engine by the handle always cause difficulty in starting, because you cannot turn it fast enough to make gas. To get easy starting by hand the choke tube must be reduced, which is bad. Two jets and two choke tubes are the only solution.

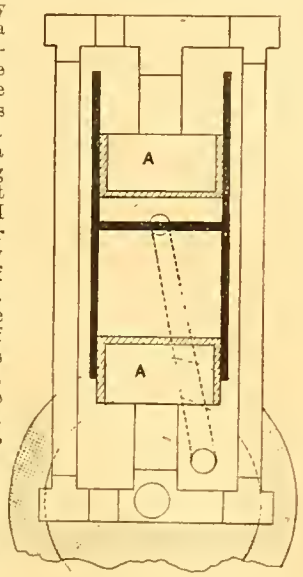
I remember some five or six years ago when I introduced the first four-cylinder motor bicycle, these engines were started with a little handle by hand, and owing to a special arrangement of my carburetters, when the engine was warm it was impossible to turn the engine round, no matter how slowly, without it starting, and when quite cold it could always be started with the greatest ease, but when an ordi

ry single jet carburetter was fitted it was impossible to rt the engine by the handle. In ninety-nine cases out a hundred, it is not the fault of the magneto or the plugs, simply the fault of the carburetter not making gas.

have written a treatise on carburation which I have t to hundreds of your readers. Any reader who has not a copy can have one by sending me a postcard, when a usal will, I think, show him the reason of the difficulty, how to cure it. CHARLES BINKS.

The Ideal Motor Cycle.

5632.]—I have been very interested in the article "My al Motor Cycle," by Mr. Rude, in *The Motor Cycle*, and hink the position he has cted for the engine is by means an ideal one for a -stroke petrol motor, un- it be water-cooled. The position for this type motor, in my opinion, is t in front of the machine. refore I beg to enclose a ch of a double-acting ol engine I invented last for aeroplanes, which I k will interest your lers, and which I now ose to fit on the front of ordinary pedal bicycle. will be seen, this engine bines the twin-cylinder of ordinary type with less half the weight—in fact, whole engine except the ns can be made from tubing, tees and elbows ed and brazed or screwed. flywheels can be enclosed a square crank case, ed on the line sug- d by your correspondent V.O." The two pistons are stationary, and can be



detached or replaced in a few seconds. The H cylinder moves with a reciprocating movement to which the outside connecting rods are attached in any suitable manner. The valves are situated in the pistons, and the inlets are automatic; sleeve or rotary valves can be employed. I now propose to work with forced induction with a scavenging device. In this case the pistons would be fitted with a combined mushroom and piston valve, and I should be glad if any of your readers would be good enough to let me know where I could purchase a suitable blower. M. HEANE.

A Reply to "Amateur Rider."

[5633.]—In answer to "Amateur Rider," letter No. 5617, I do not believe from the tone of his letter that he has ever attended an official open hill-climb. I have never seen anything to be ashamed of with the trade riders, and amongst them are some of England's noblemen and true sportsmen. The amateur riders in open hill-climbs have nothing to be ashamed of by mixing with them. I know most of the trade and private owners, and they are both a good lot of fellows, and I should be sorry to know that our future hill-climbs would secure the patronage of the type of man such as "Amateur Rider." No doubt improvements could be made by running some amateur classes under A.C.U. definition. I have been connected with cycle racing and motor cycle trials for the past twenty-six years, and am answering this as a protest against "Amateur Rider's" letter, and before closing I would like to ask him the following questions: (1.) Who finds most of the money in clubs? (2.) Who does most of the work? (3.) Where would clubs get support from if only amateur classes were run? Buck up "Amateur Rider," shake off your miserable hump, and write a letter of apology for your mistake. ELI CLARK.

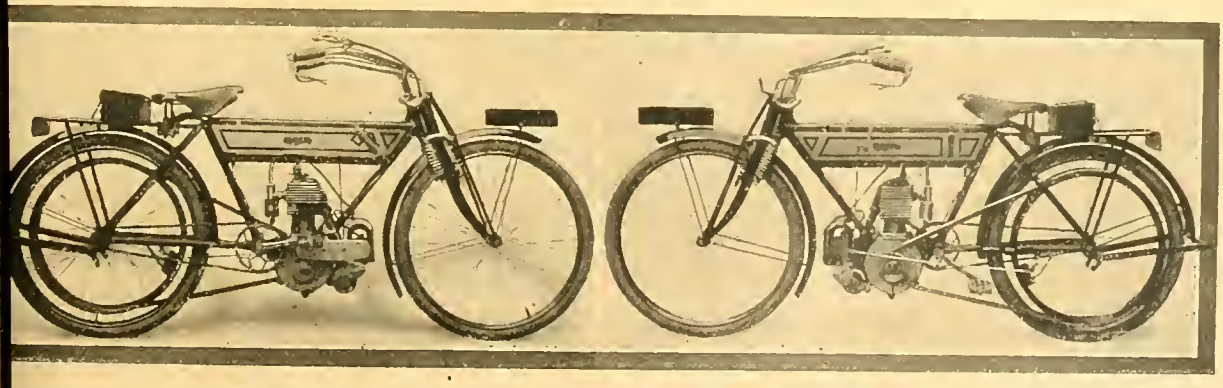
SUMMARY OF CORRESPONDENCE.

Will "Regular Rider" (Dublin) send his name and address, as we have two letters waiting for him?

Eric W. Merrall writes that the hill which he failed to climb at minimum speed in the last Quarterly Trials was Lythe Bank, not Sutton Bank. His failure was due to the fact that he mistook the finishing point of the climb.

THE NEW LIGHTWEIGHT BROWN.

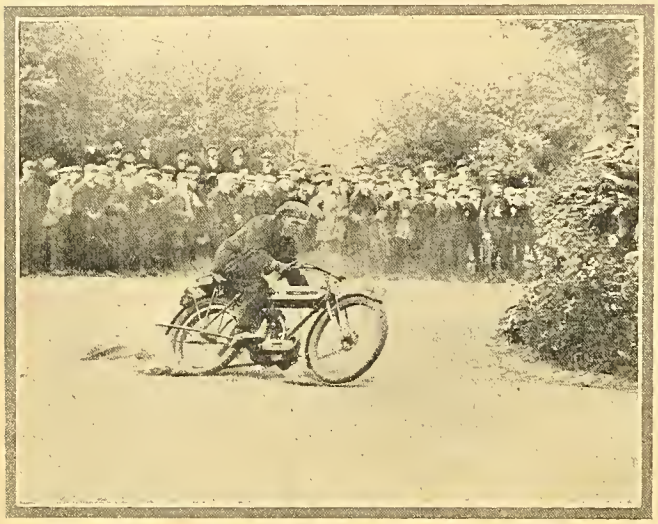
THE manufacture of a lightweight model is quite a departure for Messrs. Brown Bros., Ltd., 15, Newman Street, Oxford Street, W., as this firm has pinned its faith to 3½ h.p. models for so many years. ay be anticipated, the 2½ h.p. Brown is a thoroughly ble and practical machine. Its motive power is a 2½ h.p. h-built engine (70 by 76 mm.), with side by side anical valves. The carburetter is the 1911 lightweight B. and B., with handle-bar control. The ignition is mms high tension magneto, chain-driven. The spring are of the Druid type, and points of convenience are studied. There is a petrol gauge, the well-known Brown way petrol cock, which acts as drain cock and petrol The free wheel is of the internal type, and is consequently protected from mud and wet. The magneto is guarded by an efficient shield. The footrests are attached to the magneto bracket and working on them is the rear brake pedal. This brake, which acts on the belt rim, has an absolutely parallel motion, and when applied the whole of the surface of the shoe is in contact with the belt rim. A substantially made tubular carrier is supplied, and a good stand. A fixed pulley is fitted at present, and the standard gear is 6 to 1. The weight complete is 96 lbs. The tank is of pressed steel with a capacity of seven pints of petrol and one pint lubricating oil. The machine is equipped with Lycett's lightweight saddle, and sent out complete with toolbag, tools, stand, carrier, and number-plates; an interesting point is the fact that it is British-made throughout.



Right and left side views of the new lightweight Brown, which is rated at 2½ h.p

SUTTON COLDFIELD A.C. HILL-CLIMB.

ON Saturday last the annual members' hill-climbing contest was held at Coalport, near Ironbridge, Salop. A splendid afternoon's sport was witnessed, the eighty-three entries proving an easy record for the club. The hill is a very difficult one—about 1,000 yards in length. Two severe bends on the hill accounted for quite a crop of failures. A big crowd lined the hill, the top corner



Howard Smith (T.T. Triumph), who, in Class IV. in the Sutton Coldfield A.C. hill-climb, skidded badly and fell close to our photographer. The front wheel is clear of the ground.

being the favourite point of vantage, and the spectators were not slow to show their appreciation of a fine exhibition of corner work. The applause could be heard at the bottom of the hill. Howard Smith had bad luck in the T.T. class, coming off at the first bend, and after restarting fell again at the second turn. In this class, Brewster, Crozier, and Smytheman also fell.

The Levis two-stroke did remarkably well for so small an engine, also the 2 h.p. Humber. Walden (Triumph) was very fast in the touring class. The results on A.C.U. formula, also on time, are given below.

The Officials.

Thanks are due for the success of the day to the officials. The car and cycle judges, W. A. Riley and R. W. Duke, worked hard, and so did Arnold Mills at the scales. The timekeepers and telephone operators carried out their duties to everyone's satisfaction, and the starter, H. Royce, got everyone off in splendid time. Frank Burnett, the chief steward, seemed to be everywhere he was wanted. A great deal of praise is due to the hard-worked accountant, F. W. Finnemore, who, after each class, posted on the notice board the times and position on formula of each competitor. This was much appreciated, as each competitor could see just how he stood. Jas. St. John, the trials hon. sec., is to be congratulated on the splendid entry.

Results on Time and Formula.

CLASS I.—For Lightweight Machines. Singles 300 c.c., Twins 345 c.c.

	Formula.	Time.
H. V. Colver (2¾ Enfield twin) ...	1	1
P. J. Evans (2 Humber)	2	7
H. Rem Fowler (2¾ New Hudson)	3	2
G. Patterson, jun. (2¾ New Hudson)	4	3

CLASS II.—Single-cylinder Touring Machines up to 600 c.c.

	Formula.	Time.
A. B. Baxter (3½ Norton)	1	4
A. D. Arter (3½ James)	2	3
Horace Walden (3½ Triumph) ...	3	1

H. C. Newman (3½ Ivy Precision) was second fastest.

CLASS IV.—For T.T. Machines (T.T. Regulations).

	Formula.	Time.
J. Slaughter (3½ L.M.C.)	1	2
J. Woodhouse (3½ Ivy Precision) ...	2	1
H. C. Newman (3½ Ivy Precision)	3	1
Horace Walden (3½ Triumph) ...	4	3

UNLIMITED CLASS.—For any type of machine.

Formula.	Time.
1. G. Patterson, jun. (2¾ New Hudson)	1. W. D. South (7 Indian)
2. H. Fowler (2¾ N. Hudson)	2. T. Pollock (3½ James)
3. H. Patterson (2¾ New Hudson)	3. H. Newman (3½ Precision)

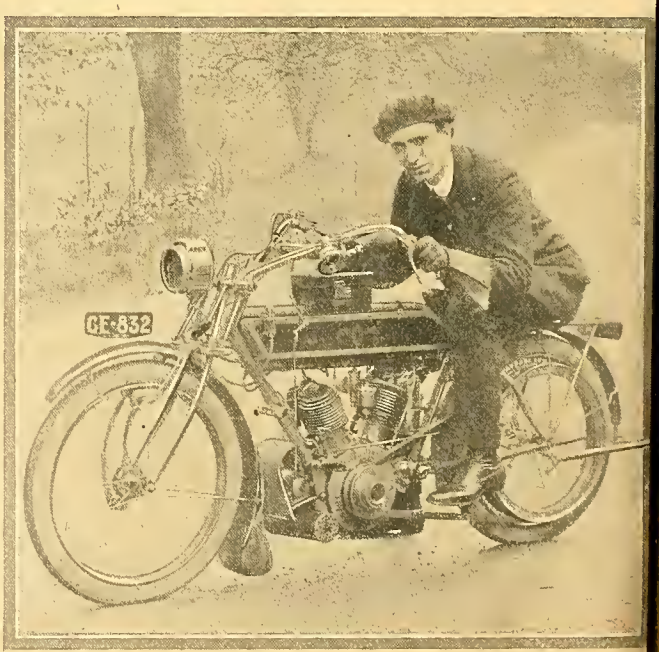
Twenty-seven entries.

Results subject to being passed by committee.

Tie for fastest time of day: W. D. South (7 Indian) and H. Walden (3½ Triumph).

SEVENTH PROVINCIAL MEETING OF THE R.A.C.

Over 200 people attended the seventh provincial meeting of the R.A.C. and associated clubs, which was held at Tunbridge Wells on Saturday last. The proceedings opened with a reception at the Town Hall by the Mayor, Col. Sydney Sladen. This was followed by a General Committee meeting in the council chamber, at which it was announced by Mr. Granville Kenyon, of the Kent A.C., that at the associates' race meeting at Brooklands on Saturday, July 29th, there would be, among other attractions, a motor cycle race. The event will be an interesting one, and will begin at noon, and after the proceedings have been brought to a conclusion there will be a supper for the participants and their friends. After the committee meeting lunch was served at the Spa Hotel in the Royal Borough, at which Sir David Salomons, Bart., presided. Amongst those present was the Hon. Arthur Stanley, M.P., a former president of the A.C.U. At the conclusion of the luncheon those who took part in the meeting proceeded to Eridge Castle, to which they had been invited by the Marquis of Abergavenny. Messrs. Hawkins and Boileau were two members of the A.C.U. who attended this function.



EDINBURGH AND DISTRICT M.C.C. OPEN HILL-CLIMB AT MANOR HILL, PEEBLES.

A. J. C. Lindsay, of Peebles (5-6 h.p. Matchless-Jap), winner of the multi-cylinder handicap, multi-cylinder scratch, and novices' handicap, and who also tied with an 8 h.p. machine for the fastest time of the day.

NORTH-WEST LONDON M.C.C.

London to Coventry and Back Run.

ON Saturday last the above club held its annual twelve hours' reliability trial, and as the weather was fine and there were no less than 33 entrants, it may be written down a complete success, although a od many failed to get through. The course was 203½ les in extent, and consisted of an out-and-home run from ck Straw's Castle, on Hampstead Heath, to Coventry, e outward route being as follows: Hampstead, Edgware med climb on Brockley Hill), Watford, Berkhampstead, rlesbury, Bicester, Banbury, Sunrising (timed hill-climb), llesbourne, Warwick, and Coventry.

A compulsory non-stop run of two miles was enforced vious to both the hill-climbs to prevent machines being den up with cool engines The method of awarding ces was to credit every competitor with a given number marks and deduct one mark for every minute that com- itors were late or early at the checking places—of which re were five—viz., Berkhampstead, Bicester, Sunrising, ventry, and Edgware, and also to deduct one mark for ing to climb either Brockley or Sunrising Hill.

The Start.

he competition started at seven o'clock in the morning, nearly all got away punctually to schedule time, the exception being A. J. Atkings (5 h.p. A.C. Sociable), lost a lot of time in finding a passenger, and also ifying some trouble in his magneto that prevented the tact breaker being advanced or retarded. G. E. Purchase h.p. T.T. Triumph) was the only competitor who lost ks by failing to climb Brockley, his trouble being a ping belt. Great inconvenience was caused to all the petitors in the neighbourhood of Aylesbury owing to number of cattle and sheep straying over the road on r way to market.

efore Bicester was reached E. F. Lawrence (3½ h.p. mph) ran through a whole gamut of trouble. First of all front tyre went down twice, then he broke the exhaust e, and no sooner was that repaired than the belt came ft. To finish a chapter of accidents the timing gear e, and he accordingly retired at Bicester, where Mr. A. Stern and Messrs. Layton and Sons were acting as stant marshals and checkers.

t Aynho, R. W. Keay (5 h.p. A.C. Sociable) had the ortune to burst both front tyres, one immediately after other, and he accordingly retired. At Warwick, O. Hill .p. Lincoln Elk) withdrew from the competition through ost unprecedented cause. The stud which secures the act breaker plate to the armature spindle came loose, for a considerable time all endeavours to get it back osition again proved abortive.

C. Williams (8 h.p. Chater-Lea and sidecar) had trouble with his clutch, and retired from the trial at Coventry, but he turned up at Hampstead in quite good time.

Lunch having been taken at the King's Head Hotel, Coventry, in which district assistance in marshalling and checking was kindly given by several members of the Coventry and Warwickshire M.C., including Geoffrey Smith and A. Elson, a start southwards was made at 1.53 p.m.

The Ascent of Sunrising.

Sunrising Hill accounted for a good many lost marks. G. E. Purchase (3½ h.p. T.T. Triumph) took a toss at the corner through following the lead of Hal Hill, who had devised a particular method of his own for getting round. H. Karslake (4 h.p. Dreadnought) complained of belt slip, and had to get off and run alongside for a few yards. J. W. C. Steinberg (3¾ h.p. Scott and sidecar) came up excellently, but had to shed his passenger for three or four yards —considering the engine power, a very fine performance. E. Gwynne (3½ h.p. Triumph) was baulked by a vehicle at the turn, but came up all right at his second attempt. R. L. Printz (Bat) met with a precisely similar trouble, but with a car, and got up well on re-attempting. G. Rowden (3½ h.p. T.T. Triumph), L. Joiner (3½ h.p. Brown), and H. C. Bean (6 h.p. Matchless) stopped just after the bend, but ascended successfully at the second attempt. S. H. Asling (3½ h.p. Bradbury) and H. J. Pooley (3½ h.p. Premier) were the only single-cylinder, single-geared riders to make clean ascents. The latter, unfortunately, was forced to retire on the return journey with some form of engine trouble. One of the A.C. sociables had to shed its passenger, but the other had no difficulty in ascending.

S. H. Asling had good luck in managing to run home ninety miles on a burst cover, the burst having caused a hole that a mouse could have crawled through. A. S. Phillips (7 h.p. V.S. and sidecar) was also dogged by tyre troubles, having a burst front cover outside Coventry.

The Survivors.

The field, exclusive of the competitors mentioned above, included: J. W. Thomas (2¾ h.p. Douglas), F. Thomas (7 h.p. G.O.K.), Hal Hill (5 h.p. T.T. Bat), Frank Fox (7 h.p. Rex), P. H. Goddard (2¾ h.p. Douglas), G. H. Hollis (2¾ h.p. Douglas), E. D. Rose (3½ h.p. Triumph), W. G. Smith (3½ h.p. Norton), A. C. Robbins (3½ h.p. Humber), W. C. Knight (8 h.p. Bat), C. J. Burton (10 h.p. Mors car), and A. O. Rixon (5 h.p. A.C. Sociable).

The cup winners are not yet known, but their names will be published as soon as possible.

Start from Jack Straw's Castle, Hampstead, of the N.W. London M.C.C.'s twelve hours' run to Coventry and back, which took place last Saturday.

THE M.C.C. LONDON-EDINBURGH RUN.

Harry G. Bell, the trials hon. sec. for the above run. ns us that a record entry has been secured. The s now total 160, of which roughly forty will compete he M.C.C. challenge cup, and about thirty have ed for the double journey medals. There are about twenty-five sidecars entered, including in this class a Morgan and a Chater-Lea runabout.

The president, Mr. Chas. Jarrott, has entered a 15 h.p. Napier. Practically every make of machine is represented from the smallest lightweight to the largest twins.

CURRENT CHAT

TIME TO LIGHT LAMPS

(GREENWICH)

May 25th	... ...	8.57 p.m.
May 27th	... ...	8.59 p.m.
May 29th	... ...	9. 2 p.m.
May 31st	... ...	9. 4 p.m.

SPECIAL FEATURES

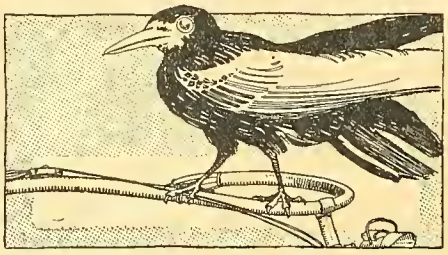
Two New Lightweights.
Suggested Championship Event
Formula in Hill-climbs.
A Novel Runabout.

A Flying Visit to the I.O.M.

A rider of a lightweight Alcyon arrived in the Isle of Man one day last week and toured round the T.T. course. The rider, who was said to be from France, made the tour on the evening of his arrival, and left next morning for his native country.

Saved by his Motor Cycle.

In the *Mining World and Engineering Record* of May 6th there is a description of how Mr. M. H. Thunder, manager of the Tekka mine, which is situated in the Federated Malay States, was suddenly attacked by Chinese when motor cycling. Mr. Thunder, while returning from Ipoh with the money with which to pay the wages of the coolies, was attacked by six Chinese armed with revolvers. The latter knew the approximate time of his return, but did not know that he had his motor cycle. But they soon found out, for he charged straight into them, knocking them in all directions. Having thus overpowered his antagonists, he proceeded on his journey without further adventure or molestation. Had he dismounted he would have been killed.



Another Motor Cycle Stolen.

Mr. M. Strong has had a 1909 Triumph stolen. The registered number is AU 389, engine No. 5,650, frame No. 138,681. Information should be given to the nearest police station, or to the owner, c/o Parr's Bank, Ltd., Long Eaton.

The Vicious Dog.

An interesting case to motor cyclists was heard at Clacton Petty Sessions on Monday, when a Mr. Arthur Knight was summoned for "cruelly ill-treating a dog by squirting an irritant fluid into its eyes." The prosecution was undertaken by the Society for the Prevention of Cruelty to Animals. It appeared that as the defendant was riding his motor bicycle the dog ran out of a house and followed him for a considerable distance, barking all the time. He consequently fired a water pistol at it, the charge consisting of water and ammonia. Th fendant said he was constantly tro by dogs running after him, and i case he had to swerve aside and p his brakes to avoid running ove animal. The Bench dismissed the on payment of the veterinary sur fee and the court costs.

Illness of R. G. Booth.

Friends and acquaintances of Mr. Booth, once a prominent member M.C.C. executive and recently an member of the A.C.U. Committee learn with regret that he has serious nervous breakdown, and ha ordered to Matlock for a complete

M.C.C. Team Trial.

The following further promis entry have been received for the Team Trial on the 17th prox. :

Essex Motor Club.
North-west London M.C.C.
Leicester and District M.C.C.
Fleet and District M.C.C.
Walthamstow Motor Club.
Northamptonshire M.C.C.
Streatham and District M.C.C

Mr. J. Von Hooydonk, the tria sec., anticipates that last year's entry will again be beaten this y that whichever team wins *The Cycle* cup will thoroughly deserv

Auto Cycle Union Notes.

TO FIND ANOTHER HILL-CLIMB FO —Messrs. Archibald Sharp, J. Brooker, and Professor Callendar been invited to serve on a sub-com to settle on a new A.C.U. formu hill-climbs.

A.C.U. ANNUAL RACE MEETING event, which will be held at Broo on June 10th, should be of great in There is sure to be plenty of flyin one of the chief attractions should international fifty kilometre race, it is hoped will be supported by from the Continent. The judge have been invited to act for this are Major F. Lindsay Lloyd, Mes W. G. Brooker, and V. Hart.

A.C.U. INTER-CLUB CHAMPION There is every chance of this event was to have been run off on Ju being postponed owing to its pr to the Tourist Trophy Race.

PERMIT.—A permit has been to the Nottingham and District to hold a series of open speed t Clipstone Park.

RECORDS PASSED.—The records established by Messrs. R. N. S W. Newsome, V. J. Surridge, and Collier have been confirmed b A.C.U. Competitions Sub-committ

SUTTON COLDFIELD A.C. HILL-CLIMB AT COALPORT, IRONBRIDGE, SALOP.

W. Woodhouse (3½ T.T. Ivy-Precision), who tied for fastest time in Class IV. of the Sutton Coldfield A.C. hill-climb with H. C. Newman, who used a similar mount. (See page 522.)

emoval of a Road Obstruction.

Readers will be glad to learn that the d road obstruction, the toll bar at orsey, on the Peterborough-Whittlesea oad, is doomed. The different councils ncerned have agreed to purchase the ad and the toll bar from their present vner and free them from the tolls.

M.C.R.C. Fourth Members' Meeting.

Three races are down for decision at ooklands on June 7th. They are as lows: 2.30 p.m., the Third One Hour nior T.T.; 3.45 p.m., the Third One our Senior T.T.; and 5 p.m., the Second iminating Handicap. Entries should posted not later than Tuesday next to e hon. sec., Mr. T. W. Loughborough, ghcliffe, Shooters Hill, Kent.

Warning.

Strong complaints are being made of e speed of motor vehicles on the Derby Matlock Road, especially through Duf- d, Belper, and Cromford to Matlock. is not known what action will be taken, it is understood that the authorities ve the matter under consideration. e dust is very bad on this and adjacent ds in dry weather, and this possibly ounts for the complaints.

nch Competition Notes.

For the touring trial Paris-Trouville, be held on June 4th, the following chines have been entered: N.S.U. (4), tosacoche (3), Magnot-Debon (3), and ne-Gillet (4).

The Coupe Brugier and Coupe des its Motos, two events organised annu- by the Marseilles M.C., to be run off Sunday, have secured a remarkably l entry. Fourteen will compete for first-named trophy and twelve for second.

posed Ten-mile Speed Limit.

o-day (Thursday, the 25th inst.), at Town Hall, Ilkley, at 10.30 a.m., a l inquiry will be held by an inspector the Local Government Board, with rence to the application of the West ing of Yorkshire County Council for mile speed limits at Burley-in-Wharfe- and Ilkley. The R.A.C., together its local associated clubs, the Brad- A.C., Yorkshire A.C., Bradford .C., Ilkley and District M.C.C., and Auto Cycle Union, will be represented he solicitor of the R.A.C.

meeting of motorists interested in application will be held prior to the iry.

day Closing of Garages.

e A.A. and M.U. has addressed a r to the Home Secretary on the ect of the Shops Bill at present re Parliament. The letter points that the exemption from Sunday ng specified is only expressed to r the sale of motor and cycle ssories to travellers, and apparently ades the sale of petrol and the ation of repairs. The letter con- s by asking the Home Secretary to pt from the Bill the ordinary ness of a garage or motor engineer. to be hoped the terms of the Bill at least permit the sale of petrol and execution of urgent repairs on ays, as motor cyclists probably use machines more at the week-end any other class of motorist.

FUTURE EVENTS.

May 27—Herts. County A.C. Open Speed Trials.
June 2-5—M.C.C. London-Edinburgh Run and Return Journey for the M.C.C. Challenge Cup.
" 5 (Whit Monday)—Brooklands A.R.C. Meeting.
" 5—Dublin and District M.C.C. Open Reliability Trial to Lisburn.
" 10—A.C.U. Race Meeting.
" 10—Nottingham and District M.C.C. Open Speed Trial at Clipstone.
" 10—Birmingham M.C.C. Open Hill Climb
" 10-11—Bradford M.C.C. Bradford to London and back. Twenty-four Hours' Open Reliability Trial.
" 17—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
" 29—"The Motor Cycle" Summer and T.T. Number.
" 30—Junior T.T. Race in the Isle of Man.
July 3—Senior T.T. Race in the Isle of Man.

Inter-club Hill-climb

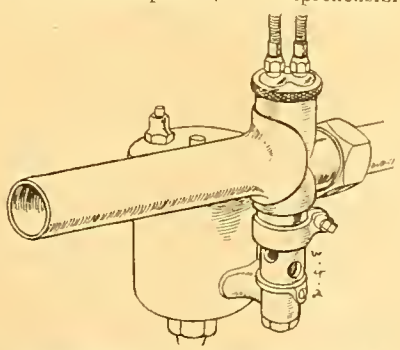
Members of the Derbyshire and North Stafford A.C., Mid-Staffs A.C., Leicester A.C., Nottingham A.C., North Staffs M.C.C., and Derby and District M.C.C. meet on Saturday next at Oakamoor to compete for the Bolton Cup and medals. By kind invitation of Mr. F. A. Bolton, all members of the above clubs will adjourn to Moor Court after the contest to partake of tea.

The Metropolitan Centre of the A.C.U.

Mr. W. H. Stirling informs us that he is endeavouring to arrange a combined run of clubs attached to the Metropolitan Centre of the A.C.U. on Sunday, June 11th, the place of meeting being Caversham, near Reading. Those wishing to participate should advise their secretaries at an early date, and the secretaries in turn are requested to communicate with the honorary secretary for the Metropolitan Centre A.C.U., Mr. W. H. Stirling, Inns of Court Hotel, Lincoln's Inn Fields, W.C., without delay.

"Boring" in Track Races.

On the occasion of the recent race meeting at Brooklands a statement was made that the driver of a car deliberately prevented the man behind him from passing by edging to the off-side of the track up the bank. This reprehensible practice is known as "boring," and we are given to understand that it has been done on more than one occasion in a motor cycle race. The sooner it is put a stop to the better, as a more unsporting and reprehensible action cannot be imagined. On the occasion of future races it will be to the interests of the authorities to place observers at different positions and report any cases which may occur, so that the offender may be dealt with summarily.



The lightweight B. and B. carburetter used by Bert Yates on his hour lightweight record. The main air funnel was removed and a carburetter chimney fitted.

The New Centaur.

We inspected the first of the new Centaur motor bicycles last week. It was of the lightweight type, closely resembling the 2 h.p. Humber. It is finished in green enamel, and has an enlarged oil tank. A light Centaur passenger quadcar, propelled by a water-cooled engine, is on the tapis.

Stolen from Brooklands.

The other day a reader left his Bradbury (frame No. 32029) with numerous other motor cycles round the aeroplane sheds at Brooklands. On his return twenty or thirty minutes later, no trace of the bicycle could be found, and police, private owners, and officials all said they had seen nothing of it. This experience suggests the desirability of an enclosure in charge of a B.A.R.C. official on Saturdays, as is usual at race meetings.

A Conviction for Obstruction.

At the Highgate Police Court, on the 10th inst., F. Fleming, the driver of a carrier's van, was prosecuted by the A.A. and M.U. for wilful obstruction on the Great North Road between East Finchley and North Finchley. The bench were satisfied that wilful obstruction had taken place, and, stating that drivers must keep within the law, the chairman imposed a fine of 20s. and costs. The Association is conducting a vigorous campaign against those users of the highway who disregard the rules of the road, and this is the third conviction obtained for offences of this character during the past few weeks.

Police Traps.

The police are very busy working a new trap in Upper Richmond Road, East Sheen, about a quarter of a mile from the Derby Arms towards East Sheen, which is about half a mile on the Sheen side of the trap mentioned in *The Autocar*. It is worked in the evening

We understand that unless motorists, and especially motor cyclists, are very careful to moderate their speed when passing north and south through Garstang there will certainly be a renewal of police activity in that portion of Lancashire.

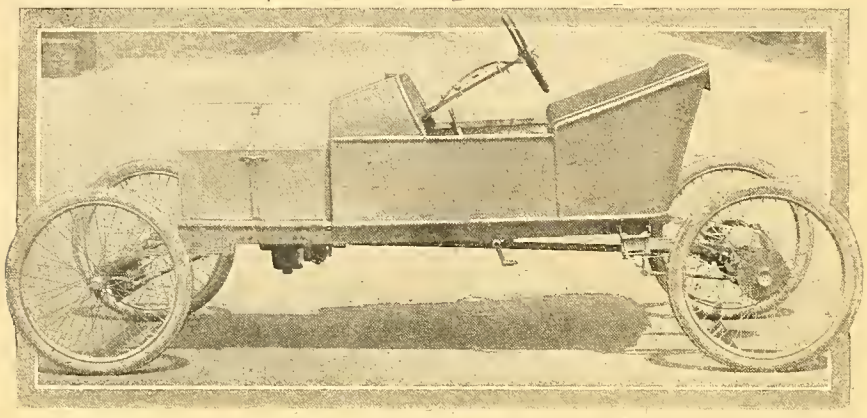
A police trap has been in operation at Upper Penn, near Wolverhampton, for a distance measuring 430 yards, between Manor Road and Muchall Road. There are several houses on the road, and there is an S bend in the thoroughfare. There are several warning signs in the timed distance. According to the police the trap is a "fair" one. The trap is worked electrically, and proceedings are taken for driving to the common danger. There have been numerous convictions.

Between Croydon and Streatham a 220 yards trap was being worked on Sunday. The police were paying special attention to motor cyclists. Those who were stopped were mostly riding old pattern machines which would be barely capable of the legal limit. Cars were allowed to pass through the trap at full speed, which went to prove that motor cyclists were the "special instruction" for the day.

NEW HUMBER MODELS.

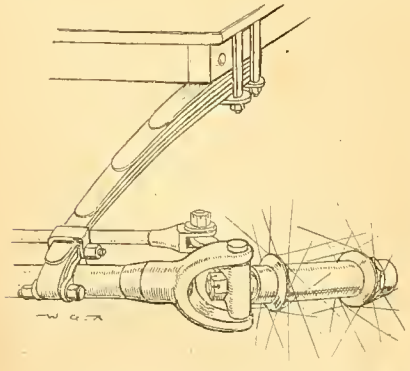
A Novel Four-wheeled Runabout. A Twin-cylinder Lightweight.

AN entirely new type of light passenger quad is being introduced by Humber, Ltd., to fill the breach between the sidecar and light car. Last week we saw this machine on the road being put through its preliminary canter, and it certainly ran extremely well. Its construction will be grasped from the accompanying illustrations. Weight has been eliminated in every part where possible, and it says something for the care in which the



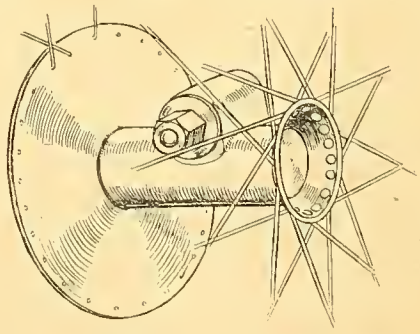
A new model. The first Humber light four-wheeled runabout, which is propelled by a twin cylinder air-cooled engine.

design has been carried out that the complete machine, minus mudguards, scales in the neighbourhood of 4 cwts. The springing of all wheels is on the same system. Quarter elliptical leaf springs are bolted underneath the ash frame, the extremities being suspended on the axles. The engine is of the twin-cylinder air-cooled V type, situated in front, where it receives the maximum cooling draughts, and a two-speed epicyclic gear is mounted direct on the engine-shaft. A shaft conveys the power from the gear to the back axle, built up with which is a miniature differential of usual car design. It will thus be gathered that when the top gear is in engagement the drive is direct from engine to back axle without any revolving



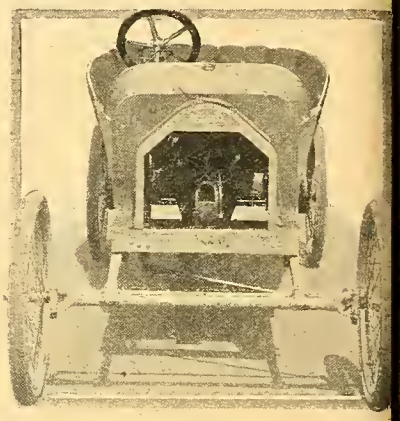
The system of springing the Humber runabout, also showing the Akermann type steering.

intermediary, which system of transmission naturally conduces to the highest efficiency. External band brakes are fitted to the rear wheels operated by a side lever and compensating device. Akermann type steering is used. The machine illustrated is the first of its type, and already an improved model is under construction. The engine which will ultimately be adopted has a bore and stroke of 72 × 100 mm., is air-cooled with cylinders at 90°, and has overhead mechanically operated inlet valves. The magneto will be mounted between the cylinders. Control will be by an accelerator pedal in place of the exhaust valve



Detachable rear wheels of the Humber runabout. A cotterpin is used to key the hub to the spindle in the same way as a crank is attached to the bottom bracket axle of a bicycle.

lifter at present used. The B. and B. carburetter is controlled by Bowden cables, the levers being mounted on the steering wheel. The operation of the gear is performed by a single pedal. Released altogether the high gear is in engagement, half depression gives the neutral position, and when the pedal is fully depressed the low gear comes into action. The smart looking scuttle dash and low raked steering column are to be retained, as also the dummy bonnet, but the two-seated body with its comfortably sloped back will be still further enhanced in appearance by the fitting of side doors



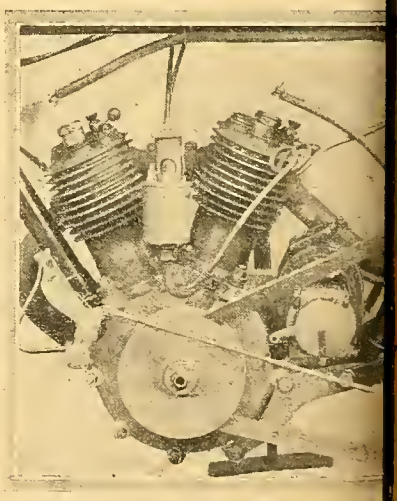
Front view of the Humber runabout. The opening in the bonnet will be provided with a protection for the engine.

The wheelbase is 7ft. 9in. and the tra 4ft. With a 6 h.p. air-cooled engine t new Humber runabout will attain a spe of forty miles per hour, and at this spe the machine is by no means uncomfor able.

Altogether, the design has been clever thought out, its simplicity, light weigh and weather-proof transmission deserv especial commendation.

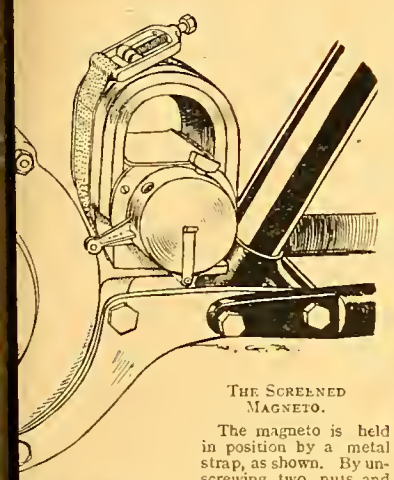
The 3 h.p. Humber Junior.

Primarily designed for the Junior T. Race, this entirely new model may expected to be listed by Humber, Lt fitted up to conform to the requireme of the tourist. Already it has proved paces on Brooklands in the hands of Wright, and speeds approaching fi miles per hour are talked of. The b and stroke are 60 × 60 mm., giving t T.T. limit capacity of 340 c.c. There



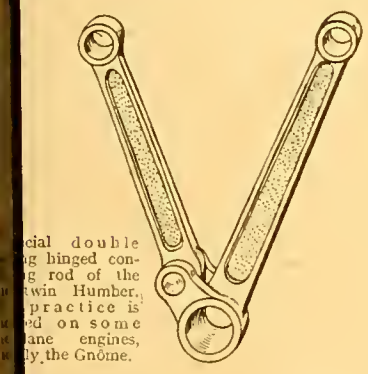
The new Humber twin-cylinder light weigh engine of 340 c.c.

w Humber Models.—



THE SCREENED MAGNETO.

The magneto is held in position by a metal strap, as shown. By unscrewing two nuts and moving the seat tube bolt the rear portion of the frame is detachable.

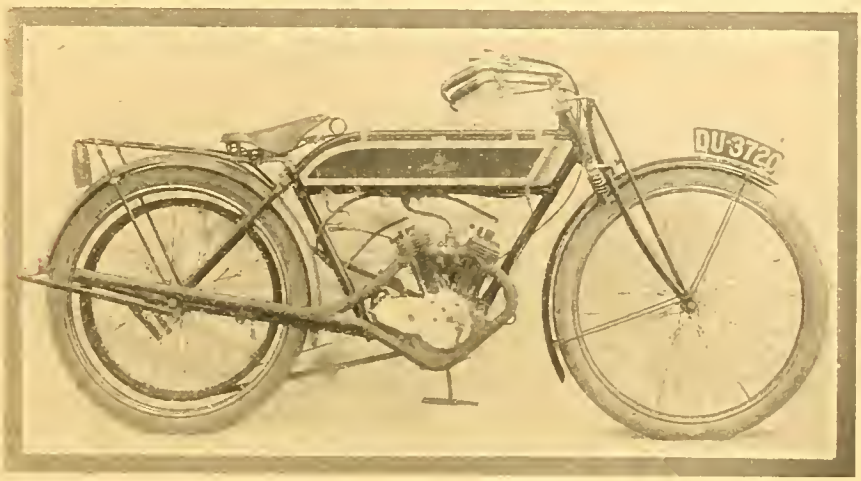


cial double g hinged con- g rod of the win Humber. practice is ed on some ane engines, ly the Gnôme.

a ball bearing on the pulley side. Each flywheel and spindle are formed of one solid steel stamping. Flat-faced valves are used, as also a single step-cut ring to each piston.

The frame, as will be seen, has a dropped top tube—a noteworthy departure for Humbers, which may eventually spread to the 3½ h.p. models. The top

situated at the rear of the crank case. The magneto is held in position by a metal strap, as in car practice. All valves are mechanically operated, each set having its own separate cams and valve tappet levers. The exhaust valve lifters are inside the timing cover, and are operated by cams, one valve being arranged to open in advance of the other. The tank



3 h.p. Humber Junior, described on this page. The exhaust piping is in accordance with the 1911 T.T. regulations; the standard model will have a single silencer.

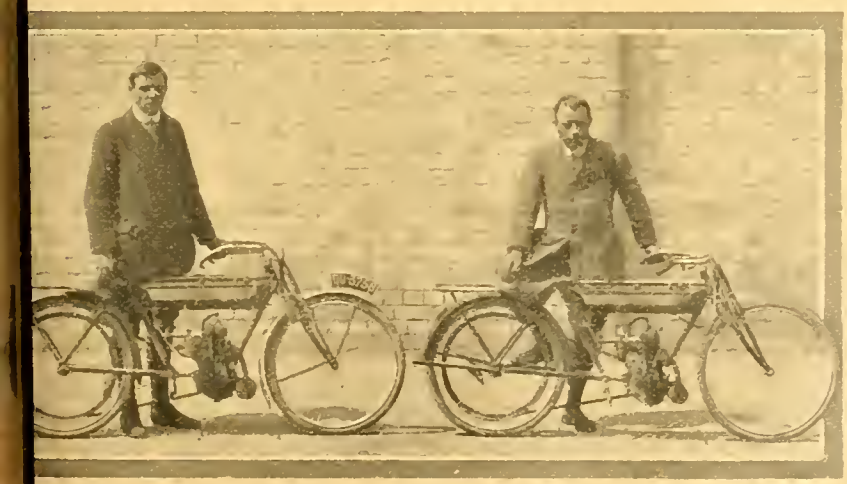
of the saddle is but 28in. from the ground. The engine is an entirely new design, and is an innovation in twin-cylinder design, as both cylinders are offset from the crankshaft. Another interesting point is that both cylinder castings are identical, and therefore interchangeable one with the other. The plugs are placed in the cylinder crown, and are fired by a double magnet Bosch magneto, gear-driven, and

capacity is one and a half gallons, and the weight complete was given as 113 lbs. An interesting point of design is the detachable rear portion of the frame. By undoing a couple of bolts on the engine plates and another at the seat tube, the rear forks and wheel complete are detachable. Druid semi-spring forks and B. and B. carburetter complete the equipment of the Humber Co.'s latest product.

RECORDS OF THE WEEK—TWO FAILURES AND A SUCCESS.

. F. Newsome, mounted on a 3½ h.p. mph, made an attempt to improve his own hour record on Thursday He was unfortunate, however, in having to give up at the end of the eighteenth lap, owing to the outside flange of the adjustable pulley running up and eventually jamming the belt. On the following day, the 19th inst., he was inside record at four laps, and continued inside till the eleventh lap. From the second lap till the eleventh his average speed was 62.32 miles an hour. At the eleventh lap, however, disaster befell him, and he had to retire owing to the cotter pin coming out of the inlet valve.

On Saturday last, Yates, the well-known Humber exponent, made an attack upon the hour lightweight record on a 60 × 70 mm. Humber. This was a Class A record for machines not exceeding 275 c.c. The c.c. of Yates's engine, however, was only 198. Despite its small dimensions, the gallant little machine ran through the fifty miles in 1h. 15m. 35⅖s., and in the hour covered 39 miles 1,615 yards, beating W. Smith's record on the Moto-Rêve, which has stood since May 19th, 1909, when he covered 36 miles 350 yards in the hour on a 274 c.c.



ht.) Bert Yates, who broke the hour lightweight record last Saturday, covering almost forty miles. (Left.) A. G. Fenn, now employed by Humber, Ltd., who assisted Yates.

Reliability Trial in Cumberland.

The Cumberland County M.C.C. held a trial on Saturday, over a course round Bassenthwaite Lake. W. F. Young (T.T. Triumph) won, and four others, P. Gilbanks, E. F. Gilbanks (Douglas), Moffat (Triumph), and Robinson (B.S.A.), tied for second place with an error of one minute each.

Welsh Hill-climb.

The Cardiff M.C. held a well organised hill-climb at Cross Hands Hill, near Usk, last Saturday. There were classes for cars and motor cycles, and the fastest times of the day were accomplished by two motor cyclists, J. H. Locke (6 Zenith) and F. J. Tanner (3½ T.T. Triumph). The formula results were: Twin-cylinder class—1, W. L. Jones (5 Indian). Single-cylinder touring—1, W. H. Bowen (3½ Triumph). Single-cylinder T.T.—1, F. J. Tanner (3½ Triumph). Passenger—1, J. H. Locke (6 Zenith and sidecar).

Walthamstow M.C. Hill-climb.

The results of this climb on Low Hill last Saturday are given hereunder:

Passenger machines—1, O. C. Godfrey (7 h.p. Indian and sidecar). Singles and twins: 1, W. S. Low (3¾ h.p. Scott). Singles (scratch): 1, F. A. Applebee (3½ h.p. Zenith). Twins (scratch): 1, O. C. Godfrey (5 h.p. Indian). Class for fastest single and twin: O. C. Godfrey (5 h.p. Indian) beat F. A. Applebee (3½ h.p. Zenith), winning a silver cup and making fastest time of the day.

DUTCH MOTOR CYCLISTS' VISIT.

Programme of Tour Across England en route for the Isle of Man.

The members of the Dutch Motor Cycle Club who are paying us a visit next month will arrive at Harwich on June 28th, and will start their tour to Liverpool *en route* for the Isle of Man at 8 a.m. that day. Their route will be Colchester, Haverhill, Cambridge (lunch University Arms), Huntingdon, Kettering, Market Harborough, and Leicester (Grand Hotel). On the 29th the riders will make their way to Liverpool *via* Ashby, Burton, Uttoxeter, Stone, Tarporley, and Chester (lunch Grosvenor Hotel). At Liverpool the party will be entertained by the Mersey M.C.C. June 30th to July 3rd will be spent in the Isle of Man. The return journey will be from Liverpool to Cambridge *via* Newport (Salop), Bridgnorth, Redditch (where they have been invited to luncheon at the Enfield Cycle Co.'s Works), Leamington and Northampton to Cambridge and Harwich.

English riders who may wish to accompany the Dutchmen on any part of their route should communicate with Mr. Percy S. Clews, Blythe Bridge, Staffordshire. The Dutch contingent will carry their national flag on their machines with the words Dutch Motor Cycle Club printed thereon and they ask all English riders who may be willing to meet them to disport their national emblem.

A RUN ROUND SOME LONDON FACTORIES.

Bat Progress.

ON a recent occasion we paid a very interesting visit to the works of the Bat Motor Manufacturing Co., Kingswood Road, Penge, S.E. In the course of a conversation with Mr. Tessier, whom we found overwhelmed with orders and a general influx of business, he informed us that he was running a Bat in the T.T. lightweight class. The machine, he told us, will probably be a single-cylinder, fitted with a change-speed gear of some sort. We also saw the frames for the Senior T.T. machines in the enamelling shop. These are specially short and very light, and are splendid pieces of work.

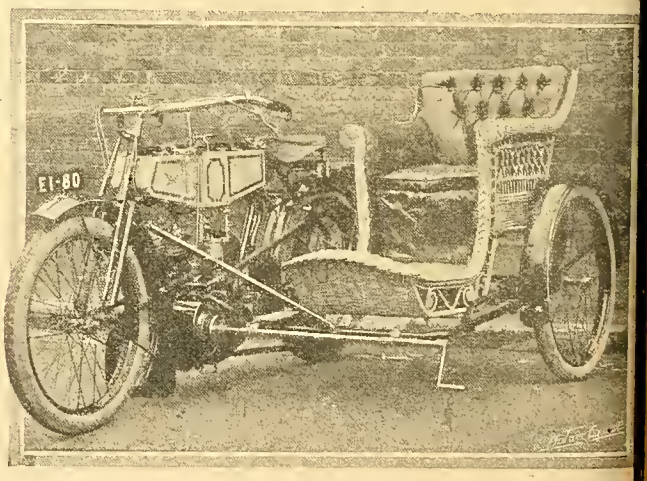
Quite a novelty was a sidecar fitted with a handle starting arrangement, which is particularly neatly carried out. As is generally known, the Bat sidecar model is fitted with a P. and M. gear, the pulley being carried on a counter-shaft forward of the mainshaft. This arrangement brings the said counter-shaft in line with the forward member of the sidecar frame, and to this is attached a starting handle with a long shaft which engages with the counter-shaft. This results in the engine being geared up from the countershaft, with the result that easy starting is ensured.

A Powerful Bedelia.

When our representative looked in at the Sabella Motor Co., in Budge Row, recently, he found this firm had just completed building a very handsome Bedelia runabout fitted with an 8 h.p. J.A.P. engine and Brown and Barlow carburetter. The bodywork is painted in French grey, and has a particularly smart appearance. There are two seats, placed tandem fashion, the front seat being covered by a large scuttle, which can be replaced by a small one when it is desired to carry a passenger. A neat Cape cart hood is fitted, and we understand that a screen will be afterwards attached. The control is arranged as follows: The air and throttle levers are on the steering wheel. Of the two pedals, one controls the brake acting on the outside of the belt rims, and the other the exhaust lifter. This latter can also be controlled by a hand lever, so that it may be permanently raised for wheeling the machine about. The second brake, acting on the inside of the belt rims, is controlled by the free engine lever, the free engine being obtained by pulling the side lever back and drawing the rear wheels forward, thus slackening the belts. A simple form of adjustable pulley is fitted, which can be altered merely by undoing one nut. A quadrant with three notches is provided for the different speeds. We understand that shortly an expanding pulley will be supplied, which can be controlled form the driver's seat. The Sabella Motor Co. are engaged in moving into new premises at 33, Southampton Street, Strand, W.C., in which they will be established by the time this paragraph appears in print.

A.C. Activity.

One of the most popuar passenger machines on the market is the A.C., a machine which has thoroughly stood the tests of time. Tested as it has been in industrial work it has resolved itself into a thoroughly practical runabout every part of which is soundly and strongly constructed. It is not surprising, therefore, to hear that the firm is overwhelmed with orders, and the staff is working night and day to cope with these. Not the least interesting item which impressed us during a recent visit to the company's factory, over which we were shown by the talented A.C. designer, Mr. John Weller, was the sound method employed in testing the engines. Every power unit is tested on the bench with a fan dynamometer, and has to develop and maintain 6 h.p. throughout the whole day. Speed indicators which are read from time to time show that the full power is being kept up. A minor, but none the less important, improvement in the A.C. is the fitting of a detachable lubricator. This lubricator is a piston valve controlled by the driver's heel, and as long as the valve is depressed the oil is allowed to flow into the crank case. With the new detachable lubricator, which is easily unscrewed, the extent of opening of the valve may be adjusted in a few seconds. This device is found to assist the engine in hill climbing.



A twin-cylinder Bat-Jap and sidecar, which, as will be seen, has a geared-up starting handle extending beyond the sidecar.

AMATEUR v. TRADE COMPETITION.

Organised by the Herts. County A.C.

ON Saturday last the motor cycle section of the above club carried out a long-distance reliability trial confined to selected riders representing the trade and the private owner. The course selected for this event was from Denham Avenue, near Uxbridge, *viâ* Gerrard's Cross, Beaconsfield, High Wycombe, Princes Risborough, Great Missenden, Amersham, and Rickmansworth, back to Denham Avenue—a distance of about forty-seven miles. This had to be negotiated four times, the actual finishing point being at Uxbridge on the fourth circuit, which brought the total distance up to about 191 miles.

As this route included such well-known hills as Kop and Rectory, it provided a good test. Kop Hill was the test gradient, and on this the riders were timed each circuit, the first and third being fast tests, whilst the second and fourth were slow tests. There was to have been an acceleration test on the second fast ascent, but, owing to a misunderstanding on the part of one of the timekeepers, who failed to put in an appearance, it was impossible to carry this out.

Composition of the Teams.

The teams consisted as follows:

Single-geared lightweights not to exceed 125 lbs. and 300 c.c.

Amateur.	Trade.
H. J. Cox (2½ Forward)	J. Holroyd (2¾ Motosacoche)

Variably-geared lightweights not to exceed 140 lbs. and 340 c.c.

C. M. Down (2¾ Enfield)	P. Phillips (2¾ Douglas)

Single-geared single-cylinders, standard 3½ h.p. touring models.

W. Cooper (3½ Bradbury)	W. A. Jacobs (3½ Rex)

Single-geared single-cylinders, 3½ h.p. T.T. models.

H. L. Cooper (3½ Triumph)	W. F. Newsome (3½ Triumph)

Single-cylinder 3½ h.p. standard touring models with clutch.

C. C. Cooke (3½ Triumph)	W. A. Sale (3½ Rover)

Single-cylinders, 3½ h.p. standard touring models with variable gears.

E. A. Colliver (3½ Zenith)	C. S. Burney (3½ Rudge)

Single-geared twins up to 750 c.c.

G. S. Carter (5 Matchless)	S. T. Tessier (5 Bat)

Variably-geared twins up to 1,000 c.c.

F. A. Hardy (5 V.S.)	F. W. Barnes (6 Zenith)

Sidecar combinations.

P. W. Bischoff (6 Zenith and sidecar)	G. Lee Evans (7 Indian and sidecar)

Unfortunately W. F. Newsome failed to put in an appearance, so the Trade team had to start one man short.

Sharp at 8 a.m. the first of the sidecar combinations was despatched, the other competitors following at two-minute intervals.

Kop Hill offered by far the best point of vantage to view the competition, and the following are a few notes made on the spot:

PERFORMANCES ON KOP HILL.

Rider.	Fast Ascent.	Slow Ascent.	Fast Ascent.	Slow Ascent.
H. J. Cox	Good	Stopped ..	Just got up	Good
J. V. Holroyd ...	Walked ...	Dismounted	Walked	Failed
C. M. Down	Assisted	Good	Assisted with feet	Just got up
P. Phillips	Very good	Good	Slow on low gear	Good
W Cooper	Failed	Stopped ..	Good	Failed
W. A. Jacobs ...	Failed	Dismounted	Baulked by Sale	Failed
H. L. Cooper ...	Very fast	Good	Very fast	Good
C. C. Cooke	Good	Good	Very good	Failed
W. A. Sale	Failed	Stopped ..	Failed	Failed
E. A. Colliver ...	Just got up	Very good	Good	Fair
C. S. Burney	Very good	Stopped ..	Just got up	Failed
G. S. Carter	Very fast	Good	Very good	Good, engine knocked badly
S. T. Tessier	Very good	Good	Very good	Good
F. A. Hardy	Very good	Excellent	Slow on low gear, good	Excellent
F. W. Barnes ...	Very good	Good	Very good	Good
P. W. Bischoff ..	Walked ..	Good	Retired	—
G. Lee Evans ...	Very good	Ran along side and remounted	Very good	Good

Before the luncheon interval Barnes had to stop for petrol, Holroyd had two stops for punctures, and Cox took the wrong road on leaving Amersham.

Luncheon was served at the Bull Hotel, Gerrard's Cross, where a stop of one hour was allowed.

On the third circuit H. Lister Cooper punctured soon after passing the finishing timekeeper at the top of Kop Hill, and on the fourth circuit W. A. Sale, who had had to dismount on the hill, was letting his machine down off the stand with his free engine running, when, on going to put his stand up, he unfortunately got his hand caught in the belt pulley and so severely crushed that he had to get a doctor to attend to it, and was forced to retire from the competition.

The Non-stop Runs.

The following riders claim non-stop runs: F. A. Hardy (5 V.S.), E. A. Colliver (3½ Zenith), S. T. Tessier (5 Bat), P. Phillips (2¾ Douglas), C. M. Down (2¾ Enfield), and H. J. Cox (2½ Forward)—four amateurs and two trade men.

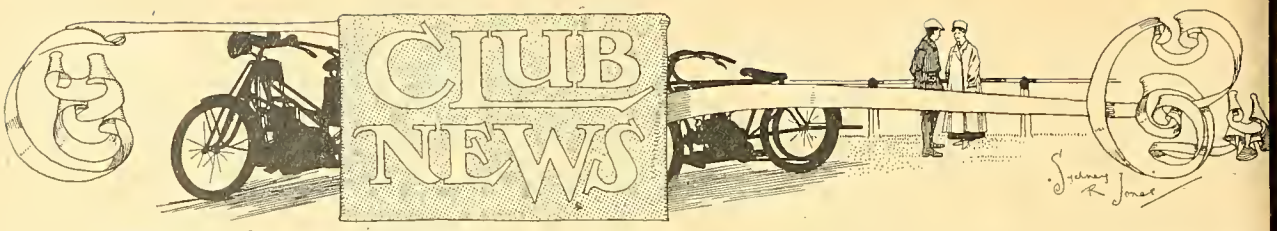
There are so many calculations to arrive at that it is impossible to announce the winning team until the various reports have been very carefully checked and examined, but the amateurs are expected to win.

The results of the competition are to be arrived at on the basis of marks lost, the team losing the least marks to be the winners.

HERTS COUNTY A.C. AMATEUR v. TRADE TRIAL LAST SATURDAY.

1. A few of the trade members: Burney, Jacobs, Sale, Evans's passenger, Lee-Evans, Tessier, and Barnes.

2. Some members of the Amateur team. Left to right: Lister Cooper, Down, Cooke Carter, Colliver, Cooper, and Hardy.



Northern League of Motor Cyclists.

The Doncaster M.C.C. and the Grimsby Marlborough M.C.C. have recently affilated to the Northern League.

A Club for Tunbridge Wells.

A club for Tunbridge Wells and district is contemplated. Riders who are interested should communicate with Mr. R. R. Courtenay, Hazelhurst, Frant, near Tunbridge Wells.

West Lancashire M.C.C.

A successful hill-climb was held recently near Lancaster. The result was that Hugh Gibson (3½ h.p. T.T. Triumph) won on formula and made fastest time.

Herefordshire M.C.C.

This club will be unable to hold its projected hill-climb on the hill known as the Cockshoot, as the county police refuse to sanction a hill-climbing competition.

Shropshire M.C.C.

It is hoped that the valuable prizes offered will induce a good entry for the club challenge cup and reliability trial on Whit-Monday, from Shrewsbury to Llandudno and back.

Worcester M.C.C.

For the members speed-judging competition to be held on the 28th inst., over a thirty-two mile course, entries will be welcomed up to the commencement of the competition by the secretary, Mr. E. W. Cook, Foregate Press, Worcester.

Taunton and District M.C.C.

The results of the highly successful reliability trial run to Bridgwater and back on the 18th inst., in which the winner was to do the journey without stop at 18 m.p.h., were as follows: 1, W. E. Potter (3½ h.p. P. and M.); 2, Phillips (3½ h.p. Triumph); 3, W. A. Male (3½ h.p. Triumph).

West Essex A.C.

The winners of the competition for the Gamage Cup, which was successfully competed for on Saturday, the 13th inst., were: 1st, W. E. Gunnett (3½ h.p. T.T. Triumph), cup and gold medal; 2nd, Dr. Barton (Napier), silver medal; 3rd, A. G. Treby (3½ h.p. Rex) and S. B. Wood (3½ h.p. Triumph), tied, bronze medals.

Dublin M.C.C. Flexibility Trial. N. E. Drury (7 h.p. Indian) nearing the summit of the hill at Glencullen.

F. Mackay (3½ Singer) and H. D. Shaw (7 Indian) starting in the Leeds M.C.C. Speed Trial. Mackay won his heat but was beaten in the final.

Leeds M.C.C.

The speed trials held last Saturday proved, in spite of a small entry and the exceedingly cold and dull weather, a very enjoyable affair. The road picked for the event was in perfect condition with practically a half-mile dead level surface. The competitors rode in pairs from a standing start. Some excellent and closely contested heats were run, it being quite a thrilling sight. The riders in most cases rode a magnificently straight race, and no accidents were reported. The winner of the event was C. Benn (1909 Triumph, two-speed gear); 2, F. Mackay (1911 3½ h.p. Singer); and the runners-up, W. E. Grange (1907 Triumph) and T. Durant (3½ h.p. J.A.P.).

Dublin and District M.C.C.

The above club had a very interesting flexibility competition on Saturday last on a hill at Glencullen, Co. Dublin. A couple of policemen appeared on the scene, and the competitors anticipated that the competition was about to be interfered with. The police, however, had merely come to see a sporting contest and to assist in the "regulation of the traffic." Fifteen members took part in the event, and most of them made very clean ascents, albeit in the slow competition some of them cut things a bit too fine, and were compelled to touch the ground with their feet, with the result that they were disqualified. When the times were compared, certain supposed discrepancies were discovered, and it was decided to lay the result before the committee before announcing the prizewinners. The following took part in the competition:

SINGLE-CYLINDER CLASS.—C. B. Franklin (4 h.p. Indian), P. Brady (3½ h.p. Rudge), F. J. Walker (3½ h.p. Rudge), R. Dumphy (3½ h.p. Triumph), J. A. Carville (3½ h.p. Triumph), T. Wood (3½ h.p. Premier), T. J. Dumphy (3½ h.p. P. and M.), R. Walshe (3½ h.p. Triumph), W. Curtis (3½ h.p. Rudge), J. Brown (3½ h.p. Triumph), and J. Doleman (3½ h.p. Triumph).

TWIN-CYLINDER CLASS.—F. J. Walker (8 h.p. J.A.P.), B. B. Harvey (8 h.p. Bat), and Noel E. Drury (7 h.p. Indian).

Western District M.C. (London).

It is proposed to hold a reliability trial for the Triumph Cup to Daventry and back on May 28th. Notice of entry should be sent in immediately to the hon. sec., Mr. Victor

News.—

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trong, Eden Hall, Montpelier Road, Ealing, W., who forward particulars of this and other club events to e interested.

Mersey M.C.C.

Glegg Arms to Whitchurch and back was the course ed for the team trial last Saturday, when five teams ree riders each competed, the winning trio being Bethell (Douglas), T. C. Jones (Bradbury), and S. W. (N.S.U.).

South-east London M.C.C.

speed-judging competition for a prize given by the l. Tyre Co. was run over a 26⅝ miles course last day, and won by E. H. Paul (3½ h.p. Rex); 2, J. A. 3½ h.p. Humber); 3, J.S. Julier (3½ h.p. Rex). It is hat remarkable that a Lagonda tricar in the contest owing to a frozen carburetter.

Formation of a Motor Club.

a meeting at the Bee Hotel, Rhyl, on the 13th inst., mber of local motorists met to confirm proposals made previous meeting to inaugurate a motor club in North . There was a good attendance, and it was finally d that a club should be formed called the North Wales Club. The first run will take place on the 26th inst. tws-y-Coed, starting at 1.30 from the Bee Hotel. All sts desiring to join should communicate with the hon. Mr. F. Tuckfield, Dedwyddfa, Mount Road, Rhyl.

Harrogate and District M.C.C.

route has been picked for the annual 200 miles reli- trial for the £25 Muratti Trophy, and is as follows: gate, Pateley Bridge, Greenhow Hill (about four miles long), Grassington, Kidstone Pass, Hawes, Sedbergh, Kendal, Shap Fell, Penrith, Alston *via* Hartside, Killhope Pass, Barnard Castle, and home *via* Leeming Lane.

The Harrogate Club will in future accept visiting members at an annual subscription of 2s. 6d. Further particulars will be forwarded on application to the hon. sec., Mr. H. W. Fortune, St. James's Chambers, Harrogate.

Norfolk M.C.C.

This club held its second annual hill-climb on Thursday last, the 18th inst., at Ringland, near Norwich. There were no less than fifty-eight entries for the different events. The competitors were timed up the hill by Mr. R. H Williams's electrical timing apparatus, which worked perfectly throughout the day. There were five different classes, three of which were handicaps, and these were calculated on Professor Callendar's formula. The hill was a very severe one, the starting gradient being 1 in 13.5, the steepest part near the top being 1 in 6.9, and the total distance one-fifth of a mile.

Class B. Geared touring machines on handicap. First prize, cup presented by the Eagle Motor Co.—1, R. O. Clark (2¼ h.p. F.N.); 2, G. Boswell (3½ h.p. Ariel).

Class C. Any touring machine on handicap for Mr. R. O. Clark's Cup, to be competed for by private owners only.—1, H. F. North (2½ h.p. Hobart); 2, Dr. V. H. Blake (2¾ h.p. Anglian).

Class D. Machines of 500 c.c. and under.—1, R. O. Clark (3½ h.p. L.M.C.); 2, C. F. North (3½ h.p. Ariel).

Class A. Single-geared machines on handicap.—1, G. Boswell (3½ h.p. Ariel); 2, H. F. North (Hobart).

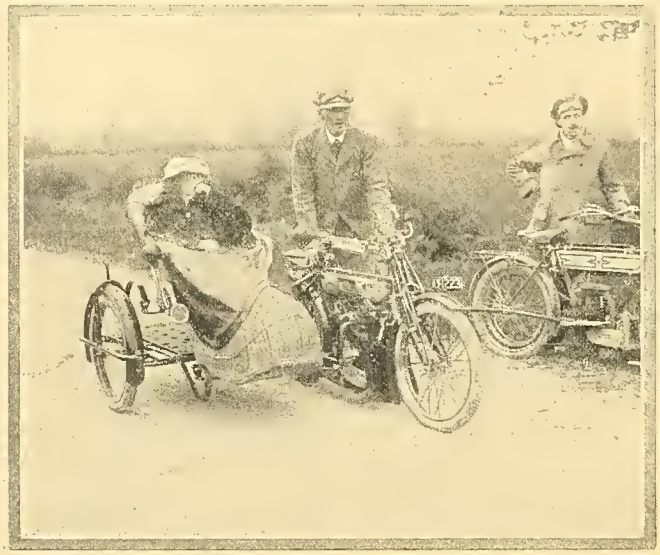
Class E. Open event for members, any machine. The winner in this class did the fastest time of the day.—1, R. O. Clark (7 h.p. Indian); 2, C. F. North (3½ h.p. Ariel).

A competitor on a Douglas going well in the Sheffield and Hallamshire M.C.C.'s Kilometre Speed Trial in Derbyshire

Club News.—

North Staffordshire M.C.C.

A speed-judging competition was held on the 21st inst. over a twenty-nine mile course. Result as follows: 1, W. Higson (3½ h.p. Triumph), half minute error; 2, R. T. Ashton (3¾ h.p. Scott), two minutes error.



Leicester M.C.C. Hill-climb. G. W. Hillyard, the well-known lawn tennis player, starting his Zenith-Gradua with Miss Crawford as passenger.

Motor Cycle Club for Bucks.

To organise and extend the pastime of motor cycling in Bucks there is a proposal on foot for the formation of a club, and Mr. H. T. Ball, of 132, High Street, Aylesbury, desires through these columns to invite suggestions from local riders. A meeting will shortly be held.

Westmorland M.C.C.

A very successful hill-climb was held on Thursday last up a local hill known as the Greyhound, with the following results:

Single Class.

		Secs.	Formula.
1.	L. Pierce (3½ J.A.P.)	65	97.90
2.	H. Westwood (3½ Triumph) ...	64	97.96
3.	J. W. Somervell (3½ Triumph) ...	67	98

Twin Class.

1.	L. S. Parker (5 Indian)	67	119
2.	J. H. Nelson (3½ Scott)	85	142
3.	W. Rogers (3½ Scott)	91	145

Sheffield and Hallamshire M.C.C.

The above club held a flying kilometre competition on Saturday last on a perfectly level private road. The events were keenly contested. The fastest time of the day was made by Dan Bradbury (3½ h.p. Norton), 31⅗s. = 70.73 miles per hour. Results:

Class I.—Lightweights up to 340 c.c.

		Time.
1.	H. Dakin (2¾ Douglas)	54s.
2.	H. Parker (2¾ Douglas)	57s.
3.	F. Sheen (2¾ Douglas)	59s.

Class II.—Standard singles.

1.	D. Bradbury (3½ Norton)	31⅗s.
2.	S. Sawer (3½ Premier)	40⅖s.
3.	C. Bellamy (3½ Zenith)	42⅖s.

Class III.—Open class.

1.	D. Bradbury (3½ Norton)	33⅗s.
2.	T. Dunk (3½ T.T. Triumph)	36s.
3.	S. Sawer (3½ Premier)	38⅗s.

Class IV.—Novices' class.

1.	J. Stacey (3½ Rudge)	40⅕s.
2.	C. Bellamy (3½ Zenith)	40⅖s.
3.	J. Ardern (3½ Bradbury)	44s.

D. Bradbury also wins Mr. Arthur Tarr's gold medal for breaking previous record held by himself.

Helensburgh M.C.C.

The opening hill-climb of this club was held on Saturday last, on Garslake Hill, Dumbarton. Result:

		Time.	Formula.
1.	R. M. McCulloch (3½ Triumph) ...	47s.	446
2.	W. Watt (3½ Triumph)	48⅘s.	398
3.	Thos. Brash (3½ Triumph)	49⅖s.	410

M.C.U.I. (Ulster Centre).

The first non-stop and second reliability run of the season promoted by this centre took place on Saturday last. The starting point was at Fortwilliam Park, and the route mapped out *vid* Larne, Glenarm, Cushendall, and Cushendun, to foot of Corkscrew Hill, where the competitors were stopped, and despatched at two-minute intervals on a hill-climb up the Corkscrew Hill (distance, about two and a half miles). The hill is a very awkward one to negotiate, and those riders who attempted to take the bends at top speed came to grief. The placings were as follows:

		Actual time on hill. M. S.	Handicap. S.	Net time. M.
1.	C. E. Murphy (3½ T.T. Triumph) ...	4 2⅕	25	3 3
2.	Dr. Coates (3½ Triumph)	4 14⅘	37	3 3
3.	Jas. Stewart (3½ T.T. Triumph) ...	4 10½	23	3 4
4.	C. R. Martin (3½ Triumph) ...	4 8⅖	21	3 4

Other competitors were: W. J. Chambers (3½ h.p. B.S.A.), J. J. Kennedy (3½ h.p. L.M.C.), B. J. McManus (3½ h.p. T. Triumph), J. Holden (3½ h.p. Zenith Gradua), J. Hollan (2 h.p. Humber lightweight), Geo. Graham (3½ h.p. Rove) and A. Wales (5 h.p. Indian).

C. E. Murphy wins in both classes, his time being faster than any competitor who had a stop on the journey.

Manchester M.C.C.

A most successful competition was carried out on Cheshi roads on Saturday afternoon last by the Manchester Mot Club. A one hundred miles team test for motor cycles a sidecars was promoted to decide upon the team to represe the club in the Motor Cycling Club's competition on Ju 17th next. The course selected was the old petrol consum tion test course, starting from the Nag's Head, Buckl Hill, taking a circular route of nearly twenty-five miles way of Agden, High Leigh, Appleton Thorne, Grappenha Stretton, Great Budworth, Plumbley, and Mere Corner, ba to the starting place. The course had to be covered fo times. There was only one competitor with a sidecar attac ment, viz., W. T. Munro (3½ h.p. Triumph), and he h trouble in the first round with a tyre valve, and retire The exact distance of the four circuits was ninety-nine mil and the standard time was 4h. 57m. No watches speedometers were allowed.

The result was: 1, F. Knight (3½ h.p. Bradbury), 4h. 53 32⅖s.; 2, F. J. Sixsmith (3½ h.p. Triumph), 4h. 49m. 17⅗s 3, G. Castagnoli (3½ h.p. L.M.C.), 4h. 47m.; 4, C. E. Ket (3½ h.p. Bradbury), 4h. 46m. 10s.; 5, H. J. Scales (3½ h. J.A.P.), 4h. 43m. 50⅖s.; 6, Fritz Sumner (3½ h.p. Triump 4h. 14m. 6⅘s.

G. Boswell (3½ Ariel), who won Class A in the Norfolk M.C.C. Hill-climb.

ub News.—

Woolwich, Plumstead, and District M.C.

A reliability trial for members will take place on the th of this month, for a pair of Kempshall tyres.

Bradford M.C.C.

On Saturday next the Dyson Shield handicap hill-climb ll take place, and on June 10th-11th the Bradford to ndon and back twenty-four hours' open reliability trial the Wm. Briggs Trophy will be held.

Purley and District M.C.C.

The above club held a speed-judging contest to Worthing d back on the 13th inst., which attracted twelve entries. mpetitors rodo in pairs, and the most accurate run was de by D. H. Ebbutt and C. W. Meredith, whose total or was 4½ minutes.

Walsall M.C.

The popularity of this new club was evidenced by the ex-lent field which turned out for the members' hill-climb at le Kop, Rugeley, on the 13th inst. The result of the test was as follows: 1, Smytheman (3½ h.p. L.M.C.); Pinson (3½ h.p. J.A.P.); 3, Walker (7 h.p. Indian).

Torbay and District M.C.C.

The results of the hill-climb held on Heytor Hill, near ey Tracey, on the 13th inst., were:

		Time. M. S.		Formula. Fig. of Merit.
ott (Indian)	...	3 35½	Maurice (Premier)	... 347½
urice (Premier)	...	3 51	Myott (Indian)	... 350⅔
ner (Triumph)	...	4 8½	Scott (Rudge)	... 362½

Gainsborough M.C.C.

hill-climbing contest took place at Thonock with the owing result:

lass I.—Old machines. Mr. Howard (3 h.p. Quadrant).
lass II.—Lightweight machines (under 125 lbs.) Mr. nell (2 h.p. Humber).
lass III.—Singles. Mr. Dodd (2¾ h.p. Minerva).
lass IV.—Multi-cylinders. Mr. Draper (5 h.p. Indian).
he above classes were decided on the A.C.U. formula.
lass V.—Open. Time only. Mr. Draper (5 h.p. Indian) Mr. Middlefield (3½ h.p. Triumph) tied for first place. first named won the re-run.

North Middlesex M.C.C.

n the 14th inst. the first reliability trial was held over a se of ninety-six miles, for which there were twenty-three ies, but owing to the severe conditions both of roads and ther—it had rained heavily for twelve hours—only three petitors succeeded in completing a non-stop run. Results: lver medal and special award for best performance.—A. rs (5 h.p. Indian).
lver medals.—D. G. Blakey (3½ h.p. Bradbury) and D. H. le (3½ h.p. Rover).
ronze medals.—N. C. Dear (2 h.p. Humber), one stop. ttle jammed, and H. C. Mills (3½ h.p. Premier), one stop, ing clutch.

Sheffield and Hallamshire M.C.C. hill-climb at Edale last Saturday. The starting point, showing first portion of the 1½ mile ascent.

South Australian M.C.C.

The above club held two hill-climbing contests on Saturday, April 8th, on Greenhill Road. The second competition was for the Continental Tyre Co.'s trophy—a silver rose bowl, value £20—the other competition being the club's first annual hill-climb, the first prize for which was presented by J. N. Taylor and Co., Ltd. The results of both events are given below:

Results of first annual hill-climb.—1, H. H. Ragless (Triumph); 2, C. R. Churchward (Lewis); 3, N. K. Torode (Lewis); 4, H. B. Gogler (Rex); 5, W. H. Davey (Triumph); 6, G. L. Blake (Norton).

Results of the competition for the Continental Tyre Co.'s Trophy.—1, N. K. Torode (Lewis); 2, C. R. Churchward (Lewis) and C. A. Hepworth (Matchless-Jap); 4, M. E. Saunders (Norton); 5, H. W. Todd (Peugeot).

Group at the opening run of the Taunton and District M.C.C.

Magneto Transmission.

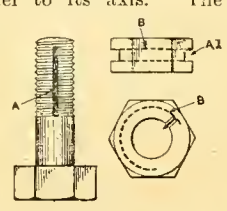
The manufacturers of the Noiseless chains, the Coventry Chain Co., inform us that their 8 mm. chain is used exclusively for the magneto transmission of Rover motor cycles.

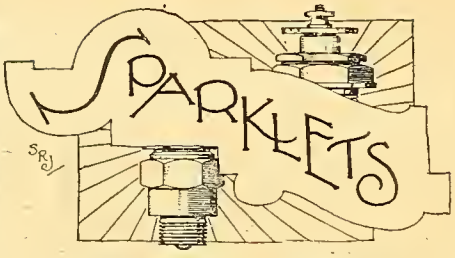
Record Time for Detaching a Sidecar.

Last week we illustrated and described the P.M.C. Quickfit sidecar couplings introduced by the Premier Motor Co., Ltd., of Birmingham. The patentee, Mr. Alfred Pilkington, recently demonstrated the handiness of his device, for single handed and without hustling, the sidecar was detached in forty-six seconds, and refitted in seventy seconds. These times should rank as new records!

The Clarke Locknut.

Mr. F. P. R. Clarke, of 100, Deansgate, Manchester, has patented a locknut and bolt, which should be of interest to motor cyclists afflicted with a nut which is in the habit of working loose. Three shallow grooves are cut along the thread of the bolt parallel to its axis. The nut has a groove formed round its hexagonal periphery, in which is fixed a narrow clock spring, almost encircling the nut. The spring ends in a tooth, which penetrates through a hole in the nut to the thread of the bolt. The nut is screwed on in the ordinary way, but when an attempt is made to unscrew the nut the tooth of the spring catches in one of the grooves cut across the thread, and the nut cannot move more than a fraction of a turn until the spring is released, which is done by hooking its loose end out of the groove on the nut by means of any suitably pointed instrument.





Automatic Carburetters.

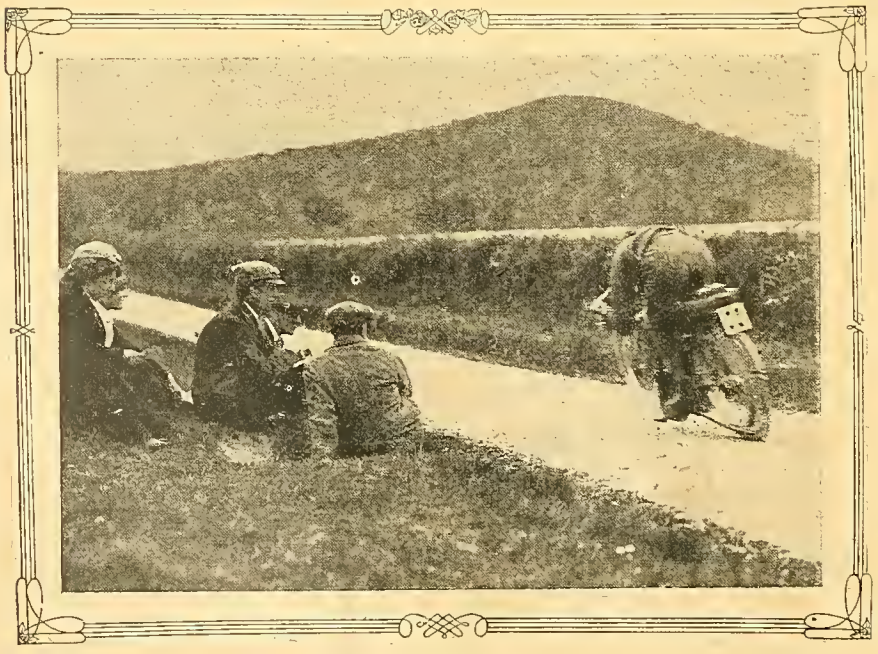
We hear very good accounts of the Claudel-Hobson automatic motor bicycle carburetter, which was described in our report of the Paris Show. We understand that the Peugeot firm in France is fitting it as a standard. It is sold by H. M. Hobson, Ltd., 39, Vauxhall Bridge Road, S.W.

Dazzling Lamps on Motor Vehicles

Brown Bros., Ltd., 40, Newman Street, Oxford Street, W., point out that as the President of the Local Government Board has been enquiring into the matter of dazzling lamps on motor vehicles, a law may be passed to suppress these, which will include motor cycle lamps. The Autoclipse motor cycle lamp, for which Messrs. Brown Bros. are sole agents, is provided with a suitable mechanism for eliminating the glare from an acetylene lamp when necessary.

Valve Grinding.

W. J. Davies and Sons have sent us a sample tin of a paste formed of a blend of their well-known 220 emery, carbide of silicon and other abrasives for valve grinding. Being mixed to the correct consistency it is a great convenience. A small tin should last a tourist ten years or more (so little is required), and care has been taken in selecting the tin to have one of very stout gauge so as to stand knocking about among tools.



M.C.C. MEMBERS' HILL CLIMB AT KOP.
H. Lister Cooper (T.T. Triumph) getting up speed. It will be noticed that he has been bumped clear of the saddle.

Catalogues Received.

We are in receipt of the latest boo describing Firmax (Messrs. Firmax, L Yeovil, Somerset), the puncture-hea preparation which has met with appr at the hands of several of our readers

Messrs. Phelon and Moore, Ltd., Cl heaton, have just published a catal of motor cycle accessories. These inc sidecars, the P. and M. two-speed for motor cycles, and numerous o useful items.

We are in receipt of the latest c logue of Ivy motor cycles, which manufactured by S. A. Newman, Cycle Works, Aston Cross, Birmingh Two models are dealt with—a si cylinder with Precision engine and ped and a lighter model with dropped fr and footrests. A speciality is also m of moderately priced sidecars.

The Muratti-Ariston Trophy presented to the Sutton Coldfield A.C. (motor cycle section) for the best aggregate performance by a club member during 1911.

Felt Grips for Motor Cycles.

Felt grips are very popular am pedal cyclists, and the makers, Mes Cooper and Co., Ltd., Little King Str Birmingham, have now sent us a sam pair of suitable grips for motor cy made from this absorbent material. motor cycle grips have enlarged ends prevent the hands slipping off. advantages of felt grips are that t can be cleaned easily with soap, water and are absolutely unbreaka Coverings for the ends of footrests also be supplied in the same material.

F.R.S. Progress.

It is not generally known that Mes Samuel Hall and Sons, of Edinburgh, well-known motor cycle lamp manu turers, have a London depot at Clerkenwell Road, E.C., where Lon riders can examine all their latest mod At these premises we were recently sh the latest F.R.S. lamp with 7in. diam glass, and a special Mangin mirror, thr ing a 1,000ft. beam. The ordinary t of F.R.S. lamp throws an 800ft. be The burner is adjustable, and, follow the well-known F.R.S. practice, the l opens back and front, and so can be ea cleaned. The lamp is well made, and provided with strong fasteners on rear and front doors. We were shown an 800ft. beam F.R.S. lamp.

THE MOTOR CYCLE

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The Spider Quad.

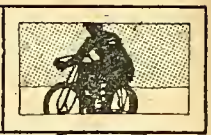
THE article which we publish to-day, "Is the Spider Quad Coming to Stay?" by Mr. B. H. Davies, should be carefully studied by all who are interested in the possibilities of the light, handy, and low-priced four-wheeler for one. We are entirely in accord with our contributor in his strong emphasis of the fact that if a spider is to be produced successfully it must, as far as possible, follow motor bicycle lines. It must retain the simplicity of the bicycle as far as it can be retained, and its limitations must be clearly realised from the start. The great difficulty undoubtedly is to get an absolutely clear understanding both on the part of the buying public and the maker that a quadricycle for one is only what its name implies and not a motor car or a passenger projectile. It may seem unnecessary to emphasise a truism, but as all previous attempts have been wrecked commercially through one or other aspect of the question being forgotten we do not feel that we need excuse ourselves for driving home the points.

On the other hand, there is unquestionably a type which comes midway between the spider quad and the motor car, for which there is also a future. To distinguish it from sidecar combinations, we may call this intermediate type the permanent sociable, which, while built as far as possible on motor cycle lines, is none the less bound to contain certain motor car features. While there is no doubt that belt transmission is a practical and fairly satisfactory drive for a motor bicycle, and might be made so for the single-seated spider quad, it can hardly be regarded as an ideal transmission for a two-seated four-wheeler, and we think it is scarcely practicable to consider the sociable and heavier type of machine without a balance-geared back axle. Then, again, if it is to be a real joy to its owners it must have either a two-cylinder engine of the horizontally-opposed, or 90° V type, while the de luxe edition should have a four-cylinder engine. In short, the sociable quad is an entirely distinct and separate proposition from the spider quad, and there is probably room for both of them, but here again our contributor's warning should be borne in mind, as there is no doubt that the temptation will be so to modify the spider quad for one that it could be used as a passenger vehicle. Directly this is done it will become a hybrid and an unsatisfactory one at that unless we are very much mistaken.

It appears to us that the void between the motor bicycle and the motor car cannot be filled by the one type, and that there is room for the two distinct styles we have discussed, but even then it should be clearly understood that there must be certain objections to intermediate types of this kind. The sociable quad will not necessarily embody all the good features of the small car or the motor bicycle—it will have some of both as well as some of their vices.

Then, again, with a spider quad, simple as it may be, it must lose the extreme simplicity of the motor bicycle, and, while it will present certain advantages, it will have drawbacks peculiar to itself. Every mechanism is a compromise, and all the best machinery in the world is simply the best compromise which has been found for a particular purpose, therefore so long as the buying public can be educated to understand the limits as well as the possibilities of the intermediate types, we shall have no anxiety for the developments we have briefly dealt with.

IS THE SPIDER QUAD COMING TO STAY?



THE general adoption of motor cycles for business purposes by middle-aged and timid riders is only in its infancy. I often try to convert a horse and trap traveller to the motor cycle; I suggest to him that a twenty miles an hour average is better than the seven m.p.h. between stopping places which is his nag's limit; I remind him that greater speed would allow him to choose between extending his business enormously, or increasing his leisure; I convince him that a pony and trap cost about three times as much to run as a motor cycle; and he repays my trouble by sticking to his pony and trap!

Nor is my obstinate friend such a fool as he seems on paper. In summer he wobbles, and writes for two or three motor cycle catalogues. In winter he grips me confidentially by the arm, and points out a mud-stained motor bicyclist of the timid variety slithering over some greasy suburban macadam, with a worried look and frantically bleating hooter. "Do you think," queries my stubborn knight of the road, "that I am man enough to tackle a job like that?" And, surveying his prosperous figure, I am fain to answer that, whatever he may have been twenty years ago, winter work on a two-wheeler is *not* going to suit his book now.

A New Type of Machine.

The name of this stubborn acquaintance of mine is Legion; and if he and his fraternity are to be drawn into the motor cycling fold, we must evolve as swiftly as possible a new type of machine which cannot skid, which starts from a standstill with the rider seated, which affords ample weather protection, and which costs very little more to run and to buy than our standard two-wheelers.

Few men still riding motor cycles can claim more experience with quads, tricycles, and tricars than has fallen to my lot, and I unhesitatingly assert that if I were going to cater for this new market, I should pin my faith to the spider quad rather than to a resurrected tricar or a two-wheel-astern single-seater. It is one of the most difficult problems in vehicular engineering to make a two-wheel-in-front tricycle or tricar with perfect steering and perfect springing.

I have owned and driven altogether some thirty or forty machines of this type, and of the whole lot only one was uniformly comfortable and safe; the remainder were either very shaky (and consequently unreliable), or else their steering was not ideal; for example, a burst back tyre meant a few lively moments with most of them.

Again, the single driving wheel always suffers from a more or less inaccessible tyre, which is unpardonable. Finally, if these problems are surmounted—which is practicable—the price goes up like a steeple; and a heavy first cost, coupled with the suspicion of high upkeep charges, would be fatal. Hence I personally give my vote against this type.

Steering Bicycles and Tricycles.

The two-wheel-astern type of three-wheeler is infinitely more promising, to my mind. True, the front tyre is rather inaccessible, but if it is only used for steering and not for driving, it should easily last a year without more than an odd puncture or two. But we have to remember that to-day tricycle steering is almost a lost art. Everybody nowadays can steer a bicycle, and with most men two-wheeler steering has become automatic. To steer a tricycle of this type, you must absolutely forget that you have ever bestridden a bicycle, or you will try to use the front wheel for balancing purposes on a cambered road, and great will be the fall thereof. The force of habit is so strong that it is not quite safe for the coolest individual alternately to drive both bicycles and two-wheel-astern tricycles. He ought to stick to one or the other. The class of buyer we have in view will be prejudiced against this type of tricycle on his first run, and he may not persist long enough to rid himself of the old bicycle habit. Hence this type of tricycle has to face a serious handicap in its appeal to the majority of its prospective clients, and therefore I vote against its chance of a universal market.

Advantages of a Spider Quad.

The spider quad suffers from none of these defects, either technical or practical. It is easy to equip it with a satisfactory steering, which with the aid of non-skid tyres is proof against every emergency and every idiosyncrasy. It is easy to spring it luxuriously. Its tyres are invariably accessible, the load and strain are distributed, and the tyres may be small enough to be easy of hand manipulation. A differential and a reverse gear are unnecessary, so long as the "spider" element and motor cycle features are jealously retained; there is no reason whatever why such a machine, if made in sufficient quantity, should not afford a decent profit at a selling price of £70 or so.

The need of the moment is a sturdy manufacturer who will evolve a rational vehicle, refuse to modify his ideas at the invitation of every Tom, Dick, and Harry, boom the machine by running a team in every trial, and keep on demonstrating and advertising till he has won his market. The demand is self-evident in nature and enormous in extent, but it may fizzle out, as other equally vigorous demands have fizzled out in the past. If it does fizzle out, the public will be to blame. As soon as a new type comes on the market the manufacturer's courage has to face

the Spider Quad Coming to Stay?

emptations. On the one hand, his sales are neces-rily few until the demand crystallises, and all the me he has to pay his men, keep himself, run costly dvertisements, nurse his tiny handful of customers, nd pay the heavy expense of running a team of achines in all the important trials.

When his capital is getting low, and his spirits e at their lowest ebb, the demand begins to simmer. dozen or so of keen-eyed enthusiasts detect the real erit of his machine and buy samples of the standard attern. He is encouraged, of course, but his nxiety does not subside; he had counted upon an rlier and a larger demand.

How Faddists Spoil a Large Demand.

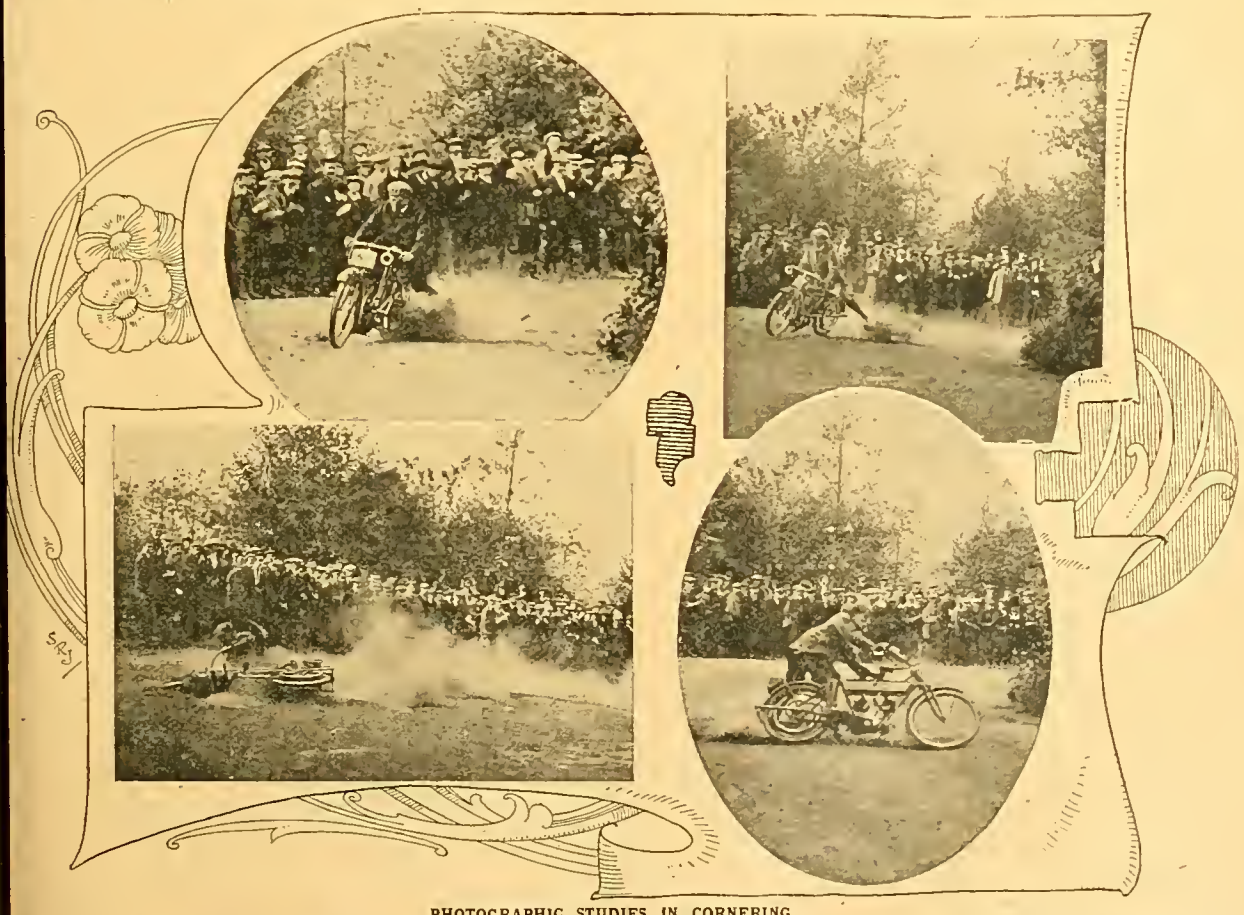
Then Brown, Jones, and Robinson begin to put in eir deadly work. The standard pattern has a h.p. engine; Brown has set his heart on a 16 h.p. gine. Brown does not reflect that if the special h.p. edition is to succeed it must be a special job roughout—it must have stronger wheels, bigger res, quite a different frame, gears, steering, etc. he manufacturer does not like to anger Brown, who a talkative sort of chap, whose word is law in two three clubs. He disorganises his works and ilds the 16 h.p. machine to oblige Brown.

Robinson sees Brown's machine; very nice, of urse, but a trifle over-powered; 5 h.p. is too little, and 16 h.p. is too much. He orders a 10 h.p.; and while he is about it, he always had a fancy for a Sizaire type of bonnet; and couldn't the designer gum on an extra seat somewhere, for Robinson is engaged to the dearest girl, and cannot possibly leave her at home on Saturdays? The manufacturer dare not disoblige a friend of Brown's, for half a dozen orders may materialise from Brown's club if Brown is satisfied, so another "special" is put in hand for Robinson; the works are again disorganised for another hopelessly unremunerative job. The unfortunate manufacturer has now no excuse for refusing to meet the whims of any faddist who comes along, and Jones, Smith, Wiggins, and a horde of other obstructions to real progress soon arrive, each madder than the last, with the inevitable result that a receiver is put in at the works, and the public get a notion that the new spider quads are no use!

The Secret of Success.

The hope of the spider quad depends on its being taken up by a clever engineering firm with good designers, a sound business man, and a big capitalist, acting in unison. If that occurs, and the faddist buyers are promptly propelled down the office stairs by the most muscular commissionnaire obtainable the spider quad will have made its market within two years.

B. H. DAVIES.



PHOTOGRAPHIC STUDIES IN CORNERING.

Whilst it is true that the average racing motor cyclist is averse to timed ascents of twisty hills, preferring a straight easy gradient, he exhibits plenty of pluck in rounding acute bends at speed, as our photograph amply demonstrates.

(*Photographs by T. Blyth Clayton and E. J. Pardoe*)

WHAT CAUSES KNOCKING?

THE following interesting and feasible explanation of "knocking" was recently published in the American motor car journal *The Motor:* "When preignition occurs the pressure within the cylinder attains its maximum value well before the piston reaches the inner end of its stroke. This maximum pressure will, under these circumstances, reach a value of 350 to 400 lbs. per square inch—which is no inconsiderable pressure. With the engine turning in a clockwise direction, the side thrust of the piston upon the cylinder wall, due to this pressure, will be upon the right-hand side of the wall. Upon the crossing of the inner centre of the crank, this side thrust is instantly shifted from the right to the left-hand side. It is at this instant of reversal of the direction of the side thrust, due to the reversal of connecting rod angularity, that the metallic knocking occurs, and it is due to the blow struck by the piston after travelling violently through the almost infinitesimal distance represented by the difference between the bore of the cylinder and the diameter of the piston."

This very practical solution of a phenomenon which has puzzled motor engineers from the earliest days is one which will doubtless be criticised, but there is no question of doubt that a worn engine knocks worse than a new one, probably due to the increased play between piston and cylinder. Another theory which tends to confirm the above view is that when the pressure on the piston is equalised, as in some forms of two-stroke engines, knocking seldom if ever occurs.

GREAT REFORMS IN THE SCOTTISH SIX DAYS' TRIAL.

MAY I once again press the attractions of the Scottish Six Days Trials as offering a most delightful holiday to the sporting amateur and as opening new trading areas to the industry? The scenery is magnificent, hence amateurs should enter in shoals, especially as the usual Scottish bugbear of extortionate hotel bills is adequately scotched by the organisers' special tariff. The number of entrants is usually small, and private owners need not fear being crowded and hustled at hotels and controls and petrol stations, as in the A.C.U. trials. The railway service in the major part of Scotland is infrequent and slow, hence there are great openings for the sale of motor cycles, which the trade should attack with energy.

In the past the popularity of these trials has been impaired by the atrocious road surfaces and the awesome hills included in the route, even though from another standpoint these ardours were welcome, as stiffening the value of the test. This year the promoters have cut out all the rough going, and guarantee that the trial will be run over fine surfaces from beginning to end. In addition all the worst hill-climbs have been made optional. No longer will the unlucky entrant of a weak engine be compelled to climb Amulree. The trial will approach the foot of such hills as Rest and Be Thankful, Amulree, Cairn o' Mount, Little Gruinard, and Glendoe, and will pause at these points while an optional timed hill-climb is held for such riders as care to compete for special awards, external to the reliability prizes. After the climb is over the trial will continue by an easier route.

This year the trial will be run during the week July 24th-29th, on a two-centre basis. Competitors will start from and finish at Edinburgh, and sleep two nights apiece at Perth and at a northern centre—Inverness was intended, but has been abandoned as all the accommodation has been snapped up for the Highland Show. The secretary is Mr. R. J. Good, of Braefoot, Liberton, N.B.

B. H. DAVIES.

LONDON-COVENTRY AND BACK RELIABILITY RUN.

The results of the North-west London M.C.C. twelve hours reliability trial to Coventry and back, described in our last issue, have now been announced:

Silver cups for ninety-five per cent. marks each journey:

	Marks lost.		Marks lost.
L. Joiner (3½ Brown) ...	1	G. Purchase (3½ Triumph)	8
G. H. Hollis (2¾ Douglas)	3	E. Gwynne (3½ Triumph)	8
Hal Hill (5 Bat)	3	R. L. Printz (6 Bat) ...	8
H. Karslake (4 Dreadnought)	4	J. Thomas (2¾ Douglas)	9
		G. Rowden (3½ Triumph)	9
F. Fox (7 Rex)	4	C. Burton (10 Mors car)...	2
H. C. Bean (6 Matchless)	5		

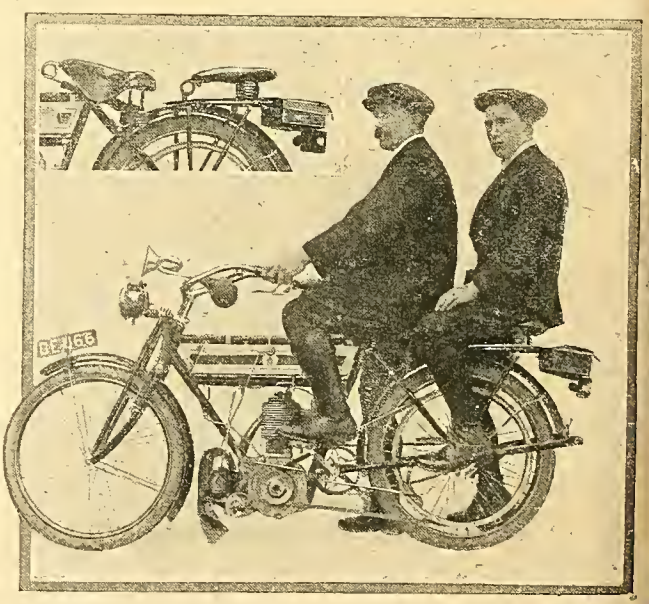
Silver medals for 80% marks each journey:

	Marks lost.		Marks lost.
W. C. Knight (8 J.A.P.)	8	S. H. Asling (3½ Bradbury)	20
P. Goddard (2¾ Douglas)	14	A. C. Robbins (3½ Humber)	22
F. Thomas (7 G.O.K. & sc.)	15	J. Steinberg (2¾ Scott & sc.)	35
E. D. Rose (3½ Triumph)	20		

Bronze medals for 60% marks each journey:

	Marks lost.
A. S. Phillips (7 V.S. and sidecar)	34
A. J. Atkings (5 A.C. Sociable)	39
A. O. Rixon (5 A.C. Sociable)	46

Special prizes are awarded to L. Joiner and F. Thomas for the best performances solo and passenger.



A passenger spring seat attached to carrier, also a special form of adjustable foot-rests patented by D. Pantail, of Haverfordwest. They can be detached in two mins.

MILITARY MOTOR CYCLING NOTES

BY "CELERITER"

SPRING is flitting past and summer is upon us. Now it is in the spring time that one is apt to begin to plan out one's arrangements for the ummer months; in some cases this is easy, but when hese engagements partake of a military nature, it is he reverse, and one must have the *entrée* behind the cenes in Whitehall to be able even vaguely to fore- ast dates of manœuvres and so forth

Official Recognition must be Conceded.

Some months ago in these notes I very earnestly ppealed to the readers of *The Motor Cycle* to come ut in the army manœuvres and prove to the military uthorities their valuc, and the answer to that appeal as most flattering, and, so far as the military authori- es were concerned, most convincing. At the same me, I pointed out that what we motor cyclists required as official recognition, and not merely temporary fficial employment. I endeavoured, if I recollect ghtly, to convince my readers that, despite their eenness, they would be of but very little real use in arfare unless they possessed some elementary know- dge of military work, and that it was therefore the uty of the military authorities to provide some form military organisation of an elastic nature which ould permit patriotic motor cyclists to acquire a dimentary knowledge of military matters and dis- pline. In the event of an emergency, they would en be adequately prepared at once to take up mili- ry duties as fully qualified soldier-motor-cyclists. or this same reason I urged the readers of *The Motor ycle* to refrain from in future offering their services the authorities as mere civilians until such time as suitable organisation had been provided. It was, I ar, on my part, a distinct invitation to boycott the ext army manœuvres. The official reply to this tack was the issue of regulations stating that thirty- x motor cyclists were required with the Expeditionary orce (regular army and special reserve) and 112 with e Territorial Force, and that such motor cyclists ould be paid during annual training a sum of 6s. 6d. r diem, petrol allowance, in addition to any army pay respect of their rank they might be entitled to, and addition a scale was laid down for the payment of ilway fares to and from the place of training. In her words, instead of forming an organised corps, otor cyclists were asked to join telegraph and divi- onal telegraph companies of the Territorial Force, d to be thankful for small mercies in the shape of y and petrol allowance.

Needless to say, the response to this invitation was ot overwhelming, and I should be proud if I ould feel sure that anything I have said in the columns the past had contributed to weaken the response.

The Next Move to Take.

Since framing the foregoing regulations the author- es have realised that their position is far from strong, and they have devised a novel way of strengthening it. *No civilian motor cyclist will be asked to take part in manœuvres this year.* Now then, gentlemen, the edict has gone forth; roll up in your thousands and clamour to be enlisted into divisional telegraph companies, or else—think of it!—you will not be invited to take part in manœuvres this year! Such is the law.

But there is yet another law which I would commend to your notice—the law of supply and demand. The question is this: Can the military authorities better afford to dispense with your services than you can afford to be banned from taking part in manœuvres? The reply is sufficiently obvious, and, if it is not, then let us put it to the test. Let us cheerfully—very cheerfully—accept the War Office ruling and refrain from taking part in manœuvres even with the inducement of 6s. 6d. per diem dangled before our eyes, and let us in our turn pronounce our dictum.

I am not a revolutionary, nor have I any quarrel with the military authorities, but I happen to have a very fair working knowledge of both sides of the question, and, moreover, I am convinced that if it were not for the Treasury we would receive official recognition as a distinct unit and have our own organisation.

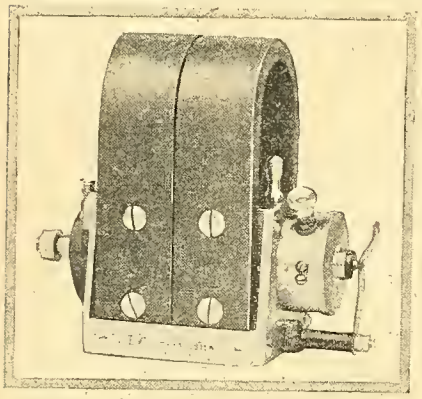
Uniform Action the Best Course.

Now in any such question there must always be two points of view; doubtless many of my readers will disagree with my views and hasten to enrol themselves in one of the telegraph companies of the Territorial Army in order that they may have the opportunity of attending army manœuvres. I do not wish to say nasty things about those who take this standpoint, but this I will say—that they will be hindering the fulfilment of the ambitions of the motor cycling world generally. We motor cyclists must eventually obtain recognition just as our brethren of the push-wheel have obtained theirs, and as our cousins of the air battalion have attained theirs but we must fight for it, and fight loyally side by side. There will, perhaps, be a few black sheep, but not many. I have reason to believe, for instance, that the existing cyclist battalions of the Territorial Army are as sick as the rest of us over this matter, and that few, if any, of the motor cyclists they possess will volunteer for service for the manœuvres. Let us make up our mind to stand or fall together, and that if the War Office is unwilling to form and train a corps of motor cyclists, then we in our turn will not be willing to turn out semi-officially to help it through with the manœuvres. Cutting off one's nose to spite one's face is not a pleasant pastime, but the true enthusiast would rather have no face at all than the cock-eyed featureless countenance the War Office is endeavouring to foist upon us. That is my opinion, but I should be glad to hear the opinion of fellow cranks upon the view they take of military motor cycling.

A NEW MAGNETO.

ENTIRELY BRITISH MADE.

THE number of magneto machines for motor cycles on the market is comparatively limited, hence the description of a new British machine—the E.I.C.—will be welcomed. Outwardly, the appearance of the E.I.C. motor cycle magneto is little different from other well-known types, nevertheless it embodies several interesting and novel features which we will proceed to explain. The model under review is known as the Type 1911 B. and has two magnets. The condenser is situated under the armature tunnel at the base of the magneto, and can be reached instantly without moving any other part whatsoever. The complete condenser is held in position by two small screws, and can be taken out of its insulated box in about a minute.



The complete magneto.

Reversible Fibre Cam.

The patented contact breaker has the steel cam on the armature-shaft and the fibre cam on the bell crank. The fibre piece has two flats which enable it to be reversed after, say, twelve months' use, thus giving the contact maker fresh life so far as that portion is concerned. The fibre piece is fastened to the end of the bell crank by two small screws. The platinum points are instantly adjustable from the outside, the locking nuts being on the screw of the switch terminal. The spring which keeps the two contacts together is riveted at one end to the contact breaker case, and at the other to the bell crank, and the whole of the contact breaker slides off in one piece by simply turning to one side the flat spring which holds the cover in place.

Examination of Contact Points.

In the cover is cut an inspection hole, provided with a dust cap, through which the contact points may be examined without removing the cover from the contact breaker tube or case. Through this hole it is possible to see if the contact points meet and separate correctly.

The range of advance and retard is 35°. The condenser being out of the way below the armature, there is no part between the armature cover plate and the armature itself, so that by the provision of a mica window, let into the brass cover plate, the timing position can be accurately seen by means of a line marked on the armature, and another line on the window. When the two lines coincide the best position has been found. This is done without moving any part of the magneto except the driving pinion, which is fastened in the usual manner.

The above important refinements have been introduced by Mr. A. E. Fletcher, who is the works manager of the Electric Ignition Co., Ltd., Sampson Road North, Birmingham, and also the designer and patentee of the magneto. The overall dimensions of this machine are height 6in., width 6in., depth 3in., while its weight is 9½ lbs. The method of lubricating the Hoffman ball bearings is to put a few drops of oil in the holes provided every 300 or 400 miles.

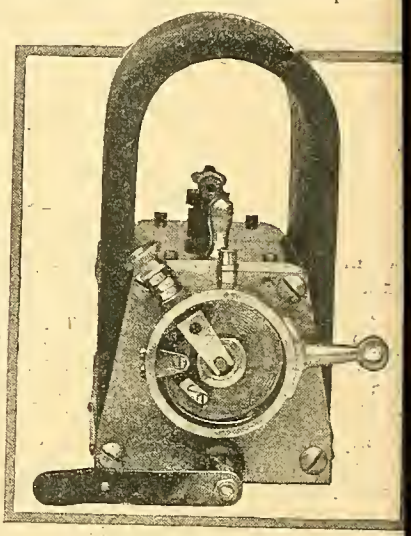
Sparking Under Compression.

A tester's report on the sparking of this magneto has been submitted to us, which shows that sparking takes place regularly under compression at the speeds indicated, and with the pressure named:

Speeds of armature.	Compression in lbs.
2,000	100
500	75
75	60

The last named test was made with ignition lever half retarded.

Although we have not ridden a machine fitted with one of these magnetos we have every reason to think that the abo claims would be fully substantiated practice, the sample magneto shown us being particularly well made a neat in appearance. After a consid able amount of experimental work the E.I.C. factory extending over t past two years, the magneto is now bei tested by one or two motor cycle man facturers with a view to its adoption f



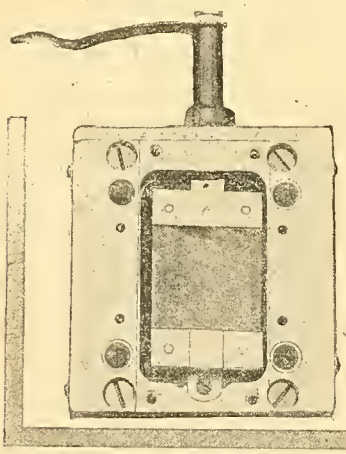
Showing contact breaker mechanism exposed by sliding away spring and removing brass cover.

next year. The reports received by th makers regarding its behaviour are di tinctly favourable, and readers ma expect to see more than one make motor cycle equipped with this all-Britis made magneto in the near future.

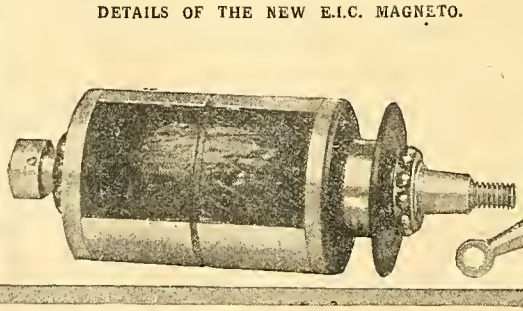
A Motor Cycle Lighting Dynamo

The Electric Ignition Co. have a goo reputation for their electrical accessorie of all kinds, and have in course of pre paration a dynamo lighting set for th use of motor cyclists. This will consis of a small dynamo, driven off the engin or wheels of the motor cycle, a miniatur storage cell, and an electric lamp. Th storage cell will be charged from the dynamo, and sufficient current will be stored in the cell to provide a good light when the machine is at a standstill, either for repairs or other delays.

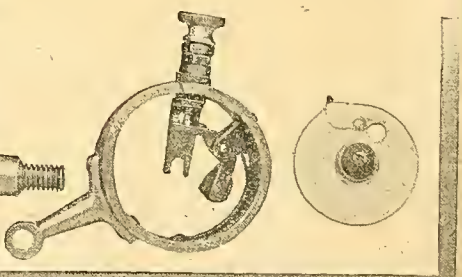
DETAILS OF THE NEW E.I.C. MAGNETO.



Magneto base showing position of condenser.



Ball bearing armature.



Contact breaker ring and cover.

OCCASIONAL COMMENTS.

By "IXION."

1912 Patterns.

t is extremely refreshing to see a fleet of 1912 dels already on the road, undergoing strenuous s in order that every little weakness may be inated before purchasers are solicited at the w. One is riding along on one's own 1911 model n suddenly an apparent duplicate meets or ses, and the acute ear or the sharp eye detects e significant difference. If you wish to run the terious rider of this interesting machine to earth are probably in for a stern chase—in many ances he will keep on riding until he drops rather n stop and give you an opportunity of inspecting experimental alterations. I have had many resting experiences of this kind, but good manners nand that we should not pry too deeply when we t a confidential tester lurking down bylanes or re the steep hills cluster thickly.

think one device which is distinctly uncommon present is going to be popular next year, to wit, decompresser starter, which now figures on the el and P. and M. engines, and is likely to be ely copied, and possibly even improved upon. I a 3½ h.p. single-geared machine started up in a ll suburban garden last week without the aid of utch; the rider walked alongside it without even ng his exhaust valve, and he walked the machine nd and round that tiny lawn at a speed of about e miles an hour in a circle of about nine feet ius until I got giddy and begged him to stop. dentally, the same machine was fitted with a manent substitute for a hooter, embodied in the ne, and most ingeniously arranged.

Preservation of Rubber.

he following methods are recommended by the *rmaceutical Journal* for the preservation of ber articles, such as hooter bulbs, tyre inner tubes, covers, patches, belts, lamp tubing, etc.:

.) Immersion in a liquid consisting of one part mmonia to two parts of water for a period vary- from a few minutes to an hour, until the elasticity he rubber is restored.

.) Occasionally washing the articles in alkaline er, which neutralises the action of sulphuric acid ned by the action of moist air upon the sulphur he rubber.

.) Immersion for a few minutes in a bath of ted paraffin, followed by drying in a heat of ut 100° C.

.) Storing in boxes containing a small amount quicklime and ammonium carbonate, which ensures ry and alkaline atmosphere. Exposure to light air is always rapidly deleterious.

Band Brakes.

must apologise for forgetting the band brakes on Daimler cars, but I must remind my corre- ndent that these brakes are provided with four s. apiece, spaced out round the drum, and igned to hold the band clear thereof in the "off" ition. No motor cycle brake that I know of sesses these holding-off arms. This certainly imises the rubbing nuisance to a great degree, but fails to eliminate other radical weaknesses in such brakes as applied to motor cycles. For instance, the band is a gross obstruction when the wheel has to be removed; compare the Rudge belt rim brake, the shoe and lever of which need not be touched when the wheel comes out!

Again, a motor car wheel bearing is not adjusted longitudinally; a motor cycle wheel is not infrequently reset in the forks, and on all such occasions the average band brake has to be adjusted, and if it takes its fulcrum off a bracket on the frame there may be considerable difficulty in getting it to take up alignment in its new position; the sides of the band will foul the flange of the drum as badly as the band often fouls the periphery of the drum. I know more than one motor bicycle which requires both band brakes to be readjusted both as to their fulcra and their operating rods whenever the rear wheel is adjusted, and the rear wheel has to be adjusted whenever the chain is tightened! I know of one sound system applicable to motor bicycles, viz., the Corbin rear band brake as fitted to the Indians. The entire band brake is self-contained with the wheel, and its adjustment is not affected by adjusting the wheel in the forks, except, of course, that the operating rod takes up a new position; this need not be adjusted to suit, as its altered length would merely cause the brake pedal to adopt a new position, which should be quite convenient for the average rider's foot.

If these undesirable band brakes must be retained, let them have hold-off arms, let them be wholly self-contained instead of partly mounted on the frame, and also less obstructive to wheel removals.

Mrs. Simpson (3½ h.p. lady's Rudge) who took part in the Leicester M.C.C. hill-climb described in our last issue.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not must be accompanied by a stamped addressed envelope for reply. Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Exhaust Valve Timing.

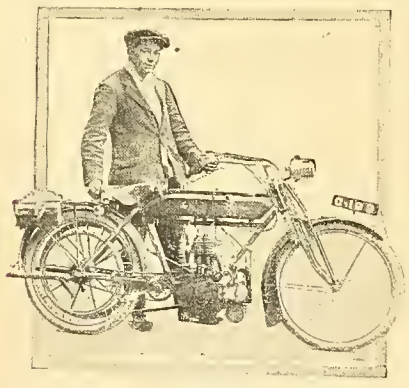
I have a 4 h.p. Antoine single-cylinder engine. I have had the valves out for grinding, also the timing gear cleaned. The engine seems to run all right, but it gets much too hot after running a few minutes. I have timed the exhaust valve to close just at the top of the stroke, and the inlet valve to begin to open immediately the piston starts to go down. All carbon deposit has been removed from the cylinder, and the engine takes any amount of air. Could you advise me what to do? —A.R.

We should advise you to time the valve to close five degrees past the dead centre of the exhaust and inlet strokes, when we think you will find an improvement in the running.

Too Strong a Mixture.

I have a 2¾ h.p. Minerva. The engine is running perfectly, as far as I can tell. I use a dry cell. My trouble is, I can only use very little air, which, of course, means that the engine consumes a lot of petrol. I get good power, but I am only using petrol. The air lever I keep just opened about a quarter of an inch, and it should be the reverse, I know. It is a B. and B. carburetter with 26 jet.—CONSTANT READER.

The fact that you cannot give much air proves one of three things: either (1) you are using a very small jet in the carburetter, (2) the jet or feed pipe is partially stopped up, or (3) the petrol level is low. If your engine is running well and climbs as well as can be expected, you need not alter the adjustments. The position of the air lever is different on all machines, as it depends on the three factors given above. It does not mean that you are using all petrol because you cannot open the extra air lever; it merely signifies that almost sufficient air to give the correct firing mixture is entering *via* the main air inlet at the base of the carburetter.



The first 3½ h.p. New Hudson-Jap with Armstrong Triplex gear, a machine which should prove particularly popular among sidecar users. The rider is G. Patterson, jun.

Carburetter Adjustments.

I have a 1909 Bradbury, which has not had much hard wear, but is very expensive in petrol consumption. It will only go about fifty miles on a gallon. After running a short time the engine gets quite hot, in spite of liberal lubrication, and at no time will it take much air. Ignition is by magneto, and the cylinder and piston are free from carbon deposits. Can you suggest a cause for this high petrol consumption?—PUZZLED.

The fact that the petrol consumption is very high, and that the engine gets hot, leads us to suppose that too large a jet is fitted, yet you say the engine takes only a small amount of air. We recommend you carefully to examine the feed pipe unions and note particularly if the petrol drips from carburetter when standing. Big waste frequently occurs in this way. Try a smaller jet, also an air funnel, which will improve matters, although it may slightly reduce the power.

Excessive Petrol Consumption.

(1.) My machine, a 5 h.p. Rex de Luxe, 1909, B. and B. carburetter, automatic inlet valve, is very excessive with regard to petrol consumption, forty to fifty miles to the tankful (about one and a quarter gallons) being as much as I can manage. There seems to be considerable blow-back through the carburetter, sometimes accompanied by a flame. Is it through weak inlet springs? (2.) Also how should I readjust my sidecar? There is considerable wear on the front tyre on the sidecar side only, also I have to keep a constant pull on handle-bar to keep front wheel from running towards the sidecar.—F.C.B.L.

(1.) The trouble seems to be due to the fact that you have a different amount of opening of your inlet valves and too weak inlet valve springs. Fit new springs a adjust the valves to open one-eighth an inch. Further, make sure that t compression of both cylinders is goo and that the carburetter is not floodi continually. (2.) We should say th the wear on the front tyre is probabl due to the fact that the bicycle whee are out of line with the sidec wheel. The pull on the handle-bar keep the machine straight should be ve slight. Test the alignment with a pie of cord at the extreme front and re points of the sidecar wheel.

Refusal to Run Slowly.

My motor cycle will not fire less than about 14 m.p.h. T details of machine are: 19 Triumph, 1909 carburetter. T fitting of a smaller jet, No. 2 instead of the No. 32, makes difference. I have adjusted the poin of the sparking plug. Would a ne fibre ring for contact breaker cure t trouble, or a new rocking arm same, as this is rather worn?—W.S.

The fitting of a smaller jet would ma the trouble rather worse. The troub may be due to two reasons: either th the carburetter is getting too much a at slow speeds, or that the fibre ring the contact breaker is worn and new one is necessary. If the rockin arm is worn it should certainly replaced. Rectify the electrical troub first of all, and if this does not cure t difficulty try a smaller choke tube in t carburetter.

Another form of pillion seat on a 3½ h.p. Rex. The passenger is seated on an air cushion, and rests her feet on a box containing spare dry batteries. Both the sender of the photograph, H. Cooper, and his passenger prefer the carrier seat to a cycle coupler which they used formerly.

Norfolk to Hampshire.

I intend next week to ride to Bournemouth on my two-speed 4½ h.p. machine and sidecar, and shall be very glad if you will kindly let me know the best te, avoiding as many of the large ns as possible. Please state dis- ce and if any steep hills.—L.C., tford.

quickest way is *viâ* Mildenhall, arket, Pampisford, Whittlesford, on, Baldock, Hitchin, Dunstable, . Aylesbury, Thame, Warborough, ngford, Didcot, East Ilsley, New- Whitchurch, Winchester, Romsey, m, Lyndhurst, Christchurch, to emouth. You are likely to find it hilly round the Thames Valley, vise there are no stiff gradients. distance is approximately 189½ miles.

Piston Ring Stuck. Large Jet.

In taking the cylinder off my Bradbury machine I found the top piston ring stuck in the groove. Can you please say: (1.) Does this affect the power of the hine much? (2.) How can I release (3.) Will it do any harm if I e it as it is? (4.) Please also say should get more speed if I fitted rger jet into my B. and B. car- tter, and is it any advantage to e the extra air inlet any larger?—M.

Yes, all the rings should be per- free. (2.) You had better soak it with paraffin and get the carbon t away from the sides of the ring st you can with the aid of a pen- gently scraping it away from the from time to time. Do not forget piston ring is very brittle, and if reak it (and there is always a risk ing this unless you have had a practice) you must fit a new If you can get the ring free off and thoroughly clean both it he groove into which it fits. It is o take off the ring by slipping y slips of tin between it and the at equal intervals. It will then slide off. (3.) If you leave it as t will cause further carbonisation, ou will eventually lose compression, bly through the other ring being up. (4.) You might get more speed t larger jet, and if you decide to he, it might be an advantage to e the extra air inlet also, but only find that the engine will take all you can give when travelling fast.

The Vicious Dog.

With regard to the case published under the above head- ing, respecting the motor cyclist who retaliated when attacked by a dog. Is such treatment to an cking dog legal?—A.C.B., Leicester. uery raised has been submitted legal adviser who says: "The s a very interesting one, and I find that there is any definite n of the courts showing that if a injures a dog in self-defence not liable for such injury. I have ittle besitation in saying that the cyclist would be justified in using essary force for the purpose of de- g himself, or his clothes, or his cycle. The general principle of the law is well defined, namely, that self-defence is natural and open to every man, but no more force must be used than is necessary in the circumstances of the case. If, however, the owner of the dog brought an action for damages, or there was a prosecution for cruelty, the motor cyclist must prove to the satisfaction of the court that the dog was attacking him, or his goods, and that nothing was done beyond what was absolutely necessary to ward off the attack."

Knocking when Picking up Speed.

With regard to the petrol consumption of my 1911 3½ h.p. free engine machine, I only get from 65 to 70 m.p.g., and I always ride with as much air as possible and the spark fully advanced. I am geared 4½ to 1, as the country here (Stirlingshire) is comparatively flat. There is one strange point, however. If I have to slow down below 20 m.p.h. to turn a corner, or for any other reason, on opening the throttle again there is always severe knocking, causing me to retard the spark. On several occasions, when picking up speed on a slight incline after being nearly stopped, or when starting, I have to retard the spark to its fullest—P.W.D.

It depends upon the timing of the spark whether it is necessary to retard the lever in picking up, but it is usually necessary to do so. The high gear is conducive to knocking in picking up speed, and the conking may be due to carbon deposit to some extent. Try the experiment of a smaller jet, and partially close air lever when picking up. The speed capabilities might satisfy you, and the engine would certainly keep cooler, and be less likely to knock.

Tuning-up.

I have got a 2¾ h.p. De Dion motor cycle, and I find it will not climb hills. The compression is good, and it runs very well on the level. I should be very glad of advice.—B.S.

We should advise you to pay attention to the tension of the inlet and exhaust valve springs. New ones would help to restore power. The adjustment of the opening of the inlet valve is also important. The amount should not exceed ⅛in. Try a lower gear.

READER'S REPLY.

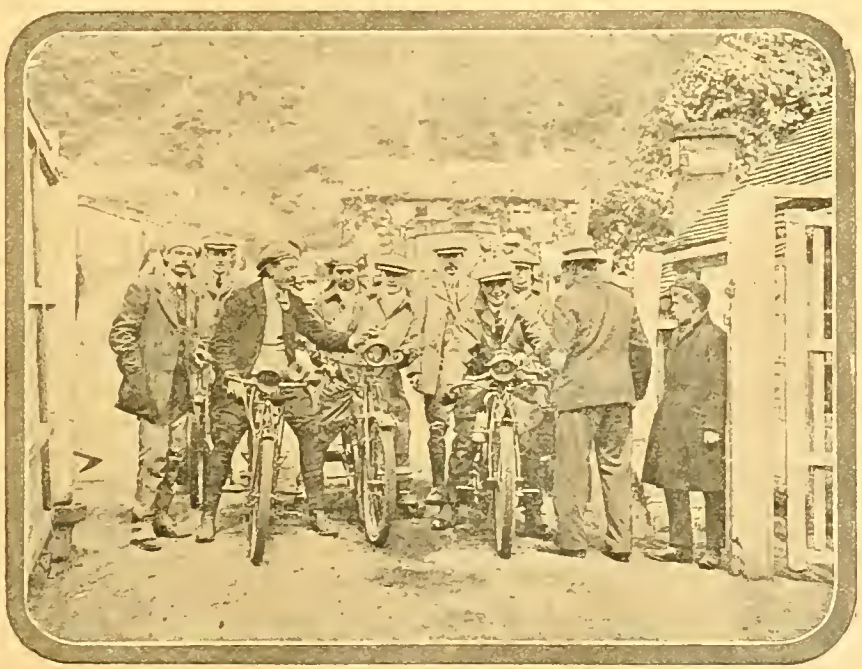
"Free" Clutches.

If your correspondent, "N.G.R." (page 490, May 18th), will after every 150 or 200 miles pull the clutch into "free," take out one of the sunk screws (an outer one), pour in paraffin, twirling the clutch round until the paraffin runs out fairly clean, and the pulley can be revolved freely by hand, he will find the clutch work satisfactorily. Freedom must be attained in this way, and not by excessive tightening of the control wire, which, by shifting the pressure of the spring from the drum to the "saddle," induces slipping of the clutch. When the clutch is not in the free position, the wire should not be taut. After so cleaning, inject a few drops of engine oil in the screw hole and in the sleeves, release trigger, revolve clutch, and mop off all external oil carefully.—F. E. Woods.

EXPERIENCES WANTED.

R.W. (Bayswater). A.C. Sociable as regards general running, reliability of brakes, wear of back tyre, and skidding.

B.E. Experiences of methods of removing carbon deposits without dismounting cylinder.



AT THE PAY BRIDGE.

Some prominent Birmingham motor cyclists held up at the pay bridge at the foot of Coalport Hill, Ironbridge, Salop. The old tollkeeper reaps a harvest on the occasion of hill-climbing competitions. The group includes G. Stevens, H. C. Pickering, Seymour Smith, and W. D. South.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

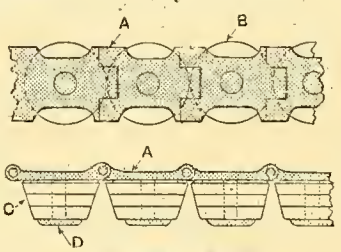
All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

How to Locate Pinhole Punctures.

[5634.]—In further reply to "Ixion's" query, let him try injecting, say, about eight drops of ammonia (household) into the inner tube, using care not to spill any on the valve stem, and when the tube is pumped up he should smell the escaping air, however minute the hole is. But why not try "Firmax" in the tubes? I can assure him from personal experience that he can mend small punctures at his leisure if he uses this preparation, as the tyre can be ridden punctured for some hours before the use of the pump is called for, and if the hole is very minute it is sealed up altogether. D. R. O'DONOVAN.

A Differential Belt.

[5635.]—I enclose particulars of my (what I may call) differential belt, which has been designed specially for such vehicles as runabouts having four wheels, and for which an ordinary differential gear would be too costly. This belt, as you will see, takes the place of the differential gear, and, in fact, is in itself a perfect differential gear. At the same time, when used in conjunction with suitable pulleys (expanding) it will give an infinitely variable gear. I claim the belt is no more expensive than any ordinary chain belt, such as the Whittle, and will last indefinitely, as the rollers are never wearing at the same place. This belt must, of course, be used in conjunction with a V pulley, one flange of which is connected to, and drives one rear wheel, and the other side flange the other rear wheel. The advantages claimed are—perfect differential gear combined with chain belt; quite mechanical. The design is, of course, protected. GEORGE TAYLOR.



Taylor's differential belt.

A. Hinges.
B. Cones or rollers. C. Friction material.
D. Pins on which rollers revolve.

External Band Brakes.

[5636.]—*Re* your correspondent Mr. C. Parkes's remark anent external band brakes, I have a 3½ h.p. fitted with a foot brake working on the belt rim, and the much-abused external hand brake. Unless I practically stand on my foot brake, there is little effect, but my band brake will stop me anywhere and any time as quickly or as slowly as I please. In other words, it works perfectly, and has been in use over two years.

I know a man here (Croydon) who builds motor cycles and fits the external band brake, and he told me that even after a year's wear this hand brake is so powerful that it will absolutely stop a 3½-4 h.p. engine when it is going full speed on the stand. Surely this would seem something like efficiency. SYDNEY R. AXFORD.

[5637.]—I cannot let the paragraph which appeared in your issue of April 27th go unchallenged. "Ixion" must surely be a very ignorant person or else unfortunate in the choice of his acquaintances, motor cyclists considered, if he thinks external band brakes such awful things. I have ridden upwards of eight thousand miles in the last ten months without making an adjustment to my external band brake, and I use it on grades such as do not exist in England, viz., the White Mountains and the Berkshires, and, furthermore, it never seizes, burns, or drags; in fact when off it is entirely clear of the brake drum all roun This experience of mine is the experience of hundreds he in this country, where the band brake has been perfect until there is no trouble with it whatever.

Here a rim brake would not be tolerated—it was discarde years ago as unmechanical and as a makeshift.

I ride an Indian (two-cylinder 5 h.p.), and my bra and the entire machine have never given me any trouble Boston, Mass. F. B. WILLIAMS.

A Suggestion regarding Vicious Dogs.

[5638.]—I have lately experienced a lot of trouble owi to dogs rushing at me whilst riding my Triumph. A fe days ago a large collie fixed me (or rather my coat), pulli me off the machine whilst going through a town. Anoth motor cyclist had just had the same experience with t same dog. On the 15th, whilst out with a sidecar, a lar retriever rushed at us, and I think if I had not slowed do it would have bitten my lady passenger.

I should be glad to know whether other motor cycli experience the same trouble, and if so, whether somethi cannot be done to prevent it. I intend in future, whe ever I have the time to spare, to stop and get the na and address of the owner of any dog that rushes at m and to inform the police, and if others would do the sa we should soon find fewer of these dogs on the road.

At present the difficulty is to prove that the owner kn the dog to be vicious, and nearly all dog owners rely this; but once the owners are warned, the defence, I belie is of no use, and thus a man who owns a vicious dog wou (after being warned) run a great risk in letting it be loo on the roads. Of course, a record should be kept of t description of the dog and the name and address of t owner; so that any rider by referring to it could fi whether a man in his particular case had been previous warned. S. H. MERRICK.

The Ideal Motor Cycle.

[5639.]—Most of your readers have their ideals respecti motor cycles, and I think I am no exception to the ru My ideal motor cycle would be one that could be made the following specifications:

(1.) Frame seat and springing same as the T.A.C.
(2.) Engine, two-stroke Scott, entirely water-cooled, 4 h.
(3.) Lubrication, automatic, as in the 1911 Scott.
(4.) Drive as in F.N., with two-speed gear, on Scott pri ciple, if possible.
(5.) Automatic carburetter with one lever control.
(6.) Magneto placed and driven in the same way as t Bat.
(7.) Tyres, Palmer cord, 26in. × 2⅜in.
(8.) Footrests as in Scott.
(9.) No pedalling gear.
(10.) Rims and spokes extra strong, at least 50% strong than those usually supplied with medium weights.
(11.) All controls on handle-bar.
(12.) Petrol tank to contain two gallons, and oil ta one and a half quarts.

Would any firm make me a motor bicycle on the abo lines? If so, I shall be happy to place my order at once. have owned and ridden a T.A.C., a Scott, a Bat, a F.N., wi two other well-known makes thrown in, and think I kn what I am writing about.

Wishing you and your excellent weekly every success,

A COMFORT SEEKING POTTERER.

Rambagh P.O., India.

A Bigger Douglas.

[5640.]—I am the owner of a 2¾ h.p. Douglas, and, like most riders of this make, I am charmed with it. I think, however, that I could suggest, perhaps not an improvement on it, but an alternative which would be popular—that is a medium weight or light heavyweight Douglas, as like the 2¾ as possible, but of about 4 h.p. Large numbers of riders who have enjoyed the smooth running and other good qualities of the lightweight would hail its advent gladly, for man is a fickle animal, and enjoys a change. But there would be some solid advantages in the higher-powered machine. One hates to drive the willing little 2¾ h.p. all out to get over some bad hill that the bigger power would take in its stride; again, it would be welcomed by many who have made up their minds that nothing under 3½ h.p. is of any use to them. It would be an excellent sidecar machine, and owing to its strong construction, good ground clearance, and well sheltered magneto, would be the ideal machine for colonial riders. I speak from knowledge that the magneto and crank case on the usual 3½ h.p. single would hardly be ever out of the water in wet weather on some colonial roads I know, where the surface is nevertheless quite good. To conclude, I am certain that a 540 c.c. Douglas would bring many new friends and much kudos to the Douglas firm, and last, but not least, many shekels to their coffers. What does Dr. Patterson think? One would be glad to hear the opinion of other Douglas riders on the subject.

COLONIAL.

A 74 lb. Lightweight.

[5641.]—As a very interested reader of your valuable paper for the past three years, I enclose a photograph of a motor bicycle which has been made to my design by the Wilton Cycle and Motor Co.

As you will see, it is really the smallest machine made, weighing 74 lbs. all complete, handle-bar control. Siemens dry cell ignition, and I have actually done thirty miles per hour on it. It climbs hills splendidly, and is really worth the careful attention of your readers who cannot afford a heavy-weight and costly machine, as this can be made for about £20 complete.

A genuine lightweight motor cycle which can be made for £20, and will doubtless be of interest to riders with slender purses.

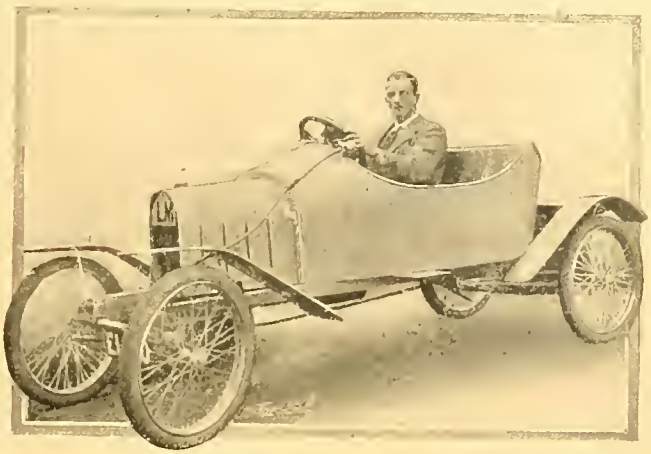
Please accept my sincere wishes for the continuance of the success of your paper, out of which I picked my idea for my present motor cycle.

R. H. O.

The Light Air-cooled Quadcar.

[5642.]—As so much interest is centred now round light air-cooled quadcars, I send you a photograph of mine, known as the "Little Midland."

It has 76 × 95 mm. twin J.A.P. engine, chain-drive to two-speed Chater-Lea gear box, and central chain to back axle, with a beautifully made and very small differential.



An enthusiastic owner of an air-cooled quadcar.

It will do 44 m.p.h. on level and 50 miles to the gallon. Gears are 4½ to 1 and 9 to 1. I find the engine does not overheat at all, and the long stroke makes it pull up hills where the 85 × 85 mm. twin would probably fail. The weight is just under 4 cwts. My belief is that if one has a four-wheeler of less than 4 cwts., the machine will not steer at all well at slow speed on a rough road, as the front wheels bounce and set up an oscillating action. I find my steering perfectly steady from 15 m.p.h. to 45. Below 15 to about 10 the light-weight, on a bad road, upsets the front wheels rather. Below 10 it is perfectly steady again. I find the little car will easily beat anything up to 25 h.p. on hills, and easily averages 22 m.p.h.

C. BOOTH JONES, M.B.

Why Colonial Models are Necessary.

[5643.]—I have been reading with interest the various letters from colonial riders, and should like to give you some of my motor cycle experiences in this country.

I have a 3½ h.p. V.S. with two-speed gear, which I have now been riding for the past three years. I have nothing but praise for the gear, provided you have a strong back wheel. You may disbelieve me when I tell you that I have had no fewer than eight rims in the back wheel during that time.

The majority of standard back wheels are far too light for our rough roads. It takes very little to dent the rims. The spokes, being too thin, snap easily, and often pull through the nipples. After each ride I have to true up my wheel and replace three or four broken spokes. I am glad to say that I have at last secured a heavy rim and heavier spokes, and now anticipate no more troubles.

I have broken three different tubes of the frame. My petrol tank is constantly being dismantled to repair leakages. Twice I have snapped the petrol pipe miles away from the nearest house (my nearest repair shop is sixty-five miles away), and had to join it with a piece of rubber tubing and the help of that useful compound Seccotine, which I always carry.

With regard to transmission. I have found the Watawata belt very satisfactory. I have no use for rubber belts.

I notice that most colonial riders require 6in. crank clearance. I quite agree with them, and would also like the same clearance for the belt rim, if possible, as I have already completely smashed one.

A machine equipped with pedalling gear is positively dangerous on rough roads. I discarded mine immediately after its arrival.

I intend returning to England shortly, and am going to have a machine built to my own specification, and when complete will send you an illustration of what I shall call a "useful colonial model."

H. M. JONES.

Salisbury, Rhodesia.

Long Distance Records.

[5644.]—I cannot see the sense of these long distance records. Anyone with a knowledge of motor cycles knows full well that any well-made machine will run all day and night for weeks if only the rider can stick it.

Considering the stops for exhaust valve, sparking plug, tyres, and belt, I see nothing wonderful in the performance of Mr. Catt's machine, but that of Mr. Catt himself seems almost beyond the endurance of man.

If it is to prove the reliability of the modern motor cycle, the task could be made far easier if two or more men were to ride the same machine, and this to be done without tools or spares of any kind. B. G. DURKIN.

The Flying Kilometre Record.

[5645.]—You will notice that in the Sheffield and Hallamshire M.C.C. flying kilometre on Saturday (reported in your issue of May 25th) that my standard 3½ h.p. Norton did the distance in 31⅘s., nearly 71 miles per hour, thus beating the record for this size engine (79 × 100) up to 500 c.c. The timekeepers were Messrs. Flint and Lonsdale, well-known timekeepers of the N.C.U., who will certify both time and distance. DANIEL BRADBURY.

[The flying kilometre record stands to the credit of W. F. Newsome (3½ Triumph), who at Brooklands covered the distance in 33.70s. = 66.38 m.p.h.—ED.]

The End-to-end Record.

[5646.]—Your correspondent, Jas. Edgcombe, will, I feel sure, regret corresponding with the police of Devon and Cornwall. The police are quite capable of prosecuting motor cyclists who infringe the law without outside assistance. Motor cycling is one of the safest modes of locomotion, and the motor cyclist who possesses the intelligence, pluck, and stamina necessary to equal or improve upon the present End-to-end figure is not the type of man who injures either himself or other users of the road. These men *do not* "blind" round corners or ride recklessly through traffic, otherwise they would never attain their object. Speed in itself is not essentially "dangerous," the matter being purely one of circumstances. JAMES S. GRANT.

Starting Motor Cycle Engines.

[5647.]—We noticed in last week's issue a writer who declares that the only way to get the utmost power out of a motor cycle, together with easy starting, is to use a complicated and expensive type of carburetter, namely, the two jet type. That this is a rather broad and exaggerated statement, anyone with the slightest knowledge of motor engineering will be ready to acknowledge, but we would like to draw this gentleman's attention to the fact that this is not the case.

For an instance, when Mr. C. R. Collier, on a 5 h.p. Matchless, broke the hour T.T. record in the 580 cubic capacity class at Brooklands, he afterwards astonished everybody present by the easy way he was able to start the engine, also the slow running he could obtain, as he was able to get down under five miles an hour.

The reason we are able to get a result like this with the Amaç carburetter is that we are using the air valve as a variable choke tube, closing down the space of the air passage by the nozzles.

We should not like to say that this is the only way there is of obtaining this result, and that there are no others, but what we would state is that we are getting the result without using any complications whatever, and in a different way from the two-jet carburetter.

THE ASTON MOTOR ACCESSORIES CO., LTD.

Hill-climbing Extraordinary.

[5648.]—It may interest some of your readers to hear that on Thursday, May 25th, I succeeded in driving my 6 h.p. Zenith to the summit of the well-known Shropshire hill, the Wrekin. I believe that no self-propelled vehicle of any description has ever before succeeded in reaching the top of this hill. I made a clean ascent as far as "the Cottage": here I dismounted to reconnoitre. I was afterwards stopped by the bottom of the crank case coming into violent contact with a prominent boulder, but after marking out a suitable course through the boulders with slips of white paper, I managed to arrive at the summit.

Probably there will be many who will hardly believe that such a climb has been accomplished, and, unfortunately, I was unaccompanied at the time, and therefore can produce no witnesses, although there were about fifty people present who saw me at the top and during my ascent.

Should anyone have any doubts as to my having accomplished this climb, I shall be only too pleased to do it again, *on certain conditions.* P. W. OWEN.

SUMMARY OF CORRESPONDENCE.

L. Fearnley, St. Mary Cray, wishes to thank the unknown motor cyclist who assisted him when in difficulties on the 21st ult., between Hythe and Dymchurch.

R. W. Keay writes to inform us that the reason of his retirement in the North-west London M.C.C. run was due to a puncture which was not discovered until both cover and tube were too badly damaged for a roadside repair.

Victor H. Raab wishes to thank a party of motor cyclists who rendered him valuable assistance outside Stanmore (Herts) on the 7th ult. Will any of them give him a call any Saturday or Sunday that may be convenient at Michel Villa, The Vineyard, Richmond, Surrey?

Mr. Fred Dover's team in the Sheffield and Hallamshire M.C.C. Reliability Trial. (See Club News.)

SPEED TRIALS AT GRIMSTHORPE PARK.

G. O. B. Hales (3½ h.p. T.T. Triumph), second on time in Class A.

BY kind permission of the Earl of Ancaster, the Lincolnshire A.C. successfully carried out a series of speed tests for cars and motor cycles on Saturday last in Grimsthorpe Park, near Bourn, Lincs. There was a good gathering of spectators from far and near to witness the trials amid such charming surroundings. Grimsthorpe Park has many historical associations. It was hereabouts that Hereward-the-Wake retreated with his followers to collect together an army to repel the onslaughts of William the Conqueror, who threatened to invade the Eastern Estates belonging to Hereward's parents.

The course chosen was not flat, including almost at the commencement a rise of 150 yards, averaging about 1 in 14. The remainder was flat, and altogether smooth. The measured stretch was about 1⅛ miles, and some splendid speeds were attained by the competitors, the majority of whom, by the way, were private owners of the machines they rode. Entries were accepted on the spot, and quite a number of motor cyclists who had ridden over to witness the fun were tempted to part with the necessary entrance fee and compete for the two prizes offered in each of the two events. Fastest time of the day was accomplished by G. Williamson, riding a three-year old 9 h.p. Bat-Jap, who averaged over a mile a minute. J. E. Harston won the single-cylinder class on time and formula on his 4 h.p. Campion-Jap., on which he had several little fakements of his own, including a five spray jet in his B. and B. carburetter, and an extra air pipe extending to the rear. His machine scaled 205 lbs., and touched nearly 60 m.p.h.

The positions on time and formula are given hereunder. The formula used was a modification of the A.C.U. formula, and was $\frac{C \times T^2}{W}$. Squaring the time was found to render the formula better suited to a speed event owing to the increased wind resistance. The competitors and their machines were weighed at the conclusion of the run, each rider being allowed two runs over the course, the best time counting.

CLASS A. Single-cylinders.

Result on formula.	Fig of merit.
W. G. Connell (2 Humber)	67.5
J. E. Harston (4 Campion-Jap)	69.6
G. Smith (3½ free engine Triumph)	75.4
G. O. B. Hales (3½ T.T. Triumph)	76.1
J. H. Brooks (3½ Premier)	87.7
Geo. Williamson (3½ Brough)	90.5

CLASS B. Multi-cylinders.

G. Williamson (9 Bat-Jap)	104.5
R. K. Thompson (5 T.T. Rex)	113.1
A. D. Draper (5 Indian)	119.2
W. E. West (2¾ Enfield)	126
A. L. Shaw (5 Vindec)	150.4
L. G. Dawson (9 Chater-Jap)	161.0

CLASS A. Single-cylinder machines.—Sixteen competitors.

Result on time.	Time. M. S.
J. E. Harston (4 Campion-Jap)	1 12⅖
G. O. B. Hales (T.T. Triumph)	1 14⅖
G. Smith (clutch Triumph)	1 15

CLASS B. Twin-cylinders.—Eight competitors. The first three on time were:

G. Williamson (9 Bat-Jap)	1 4
J. K. Thompson (5 Rex Speed King)	1 14⅘
A. D. Draper (5 Indian)	1 20

A. Webster (Hobart) ready to start. Beside him are W. J. Martin (Bradbury) and J. H. Brooks (Premier).

RACING AT PORTMARNOCK.

ON Saturday afternoon, in glorious weather, the Dublin and District M.C.C. carried out the second race meeting of the season on the beautiful "silver strand" course at Portmarnock, the little seaside village in County Dublin, which has become quite famous as the venue for motor cycle speed fixtures. These two events were a mile scratch race, and—for the first time in the history of the club—a fifty miles handicap. Before the racing started Mr. F. J. Walker, the secretary, met with a mishap while riding over the course. His machine slipped, and he was thrown, cutting his head rather badly. However, after his wound had been bandaged Mr. Walker pluckily continued his duties. There were fifteen starters in the mile scratch race. Results:

Rider and machine.	Time.
1. J. Healy (3½ h.p. Rudge)	1m. 12⅕s.
2. W. J. Chambers (3½ h.p. B.S.A.)	
3. C. P. Kirk (3½ h.p. Rudge)	

Won by 100 yards; five yards separated second and third.

Seventeen started in the fifty miles handicap, M. F. Millington first going off on a little 2 h.p. Singer, with 25 min advantage, and he had covered about forty miles of the distance without a stop when called off. Some very fine exhibitions of motor cycle driving were witnessed during the race, notably Noel Drury (7 h.p. Indian), J. Healy (3½ h.p. Rudge), J. A. Carville (3½ T.T. Triumph), and Harvey (5 h.p. F.N.). The latter had to stop to fit a new rear inner tube but made up wonderfully afterwards. There were many retirements, only seven men covering the full distance. Results:

Rider and machine.	H.	M.	S.	Start
1. Noel Drury (7 h.p. Indian)	1	0	29⅗	s. sc
2. J. A. Carville (3½ h.p. T.T. Triumph)	1	6	36⅗	... 6m
3. R. Walshe (3½ h.p. T.T. Triumph) ...	1	7	14⅘	... 7m
4. V. Barton (3½ h.p. T.T. Triumph) ...				... 7m
5. A. Kirk (3½ h.p. T.T. Triumph) ...				... 6m
6. J. Stewart (3½ h.p. T.T. Triumph) ...				... 6m
7. Capt. Barry-Martyn (5 h.p. Indian) ...				... 5m

INTER-CLUB HILL-CLIMB AT OAKAMOOR.

FOUR clubs took part in a motor cycle hill-climbing competition at Oakamoor, North Staffordshire, on Saturday last, this being the third annual contest for the silver challenge cup presented by Mr. F. A. Bolton, J.P., of Moor Court, Oakamoor, president of the Derbyshire and North Stafford A.C. The event was open to members of the Derbyshire and North Stafford A.C., the Derby and District M.C.C., the Mid-Stafford A.C., and the North Stafford M.C.C.

The trial took place on Star Hill, a steep ascent on the Weaver Hills. The winner received, in addition to the trophy, a gold medal, and the runner-up a silver medal. A special silver medal was awarded to the competitor making the fastest ascent. All machines were handicapped on formula. Mr. Bolton officiated as judge and Mr. A. B. Bennett as starter.

The motor cycle contest provided some interesting sport. Close finishes were the order, one of the best being that between Mr. D. C. Bolton and his brother, Mr. E. J. Bolton, both of the Derbyshire and North Stafford A.C., the former of whom, receiving 4s. start, just scraped through. The trial eventually resolved itself into a match between the holder of the cup, Mr. C. E. Fowke (Mid-Stafford A.C.), and Mr. H. R. Wellings (North Stafford M.C.C.). Mr. Fowke, receiving 3⅘s., was again successful, his opponent, who had run consistently throughout, gaining the silver medal. Mr. E. J. Bolton easily accomplished the fastest time. Details:

D.S., Derbyshire and North Staffordshire A.C.
D.D., Derby and District M.C.C.
M.S., Mid-Stafford A.C.
N.S., North Staffordshire M.C.C.

FIRST ROUND.

D. C. Bolton, D.S. (3½ Triumph), beat W. E. Murden, D.D. (3½ Humber), 20⅘s. start.
E. G. Boissier, D.D. (3½ H. and M.), 15s., beat C. Warrington, N.S. (3½ Humber).
C. E. Fowke, M.S. (3½ Triumph), 13s., beat E. V. Clarke, D.D. (3½ Bradbury).
J. A. Prendergast, N.S. (3½ Rudge), 14⅗s., beat S. H. Clarke, D.D. (3½ Bradbury).
V. Jobson, D.D. (3½ Bradbury), beat E. Cotton, N.S. (2 Humber), 30⅘s.
W. B. Rudge, M.S. (3½ L.M.C.), 13⅗s., beat T. Jones, D.D. (3½ Rex).
A. E. Mitcham, D.D. (3½ H. and M.), beat — Webster, N.S. (3½ Triumph), 3⅘s.
J. H. Higson, M.S. (3½ Triumph), beat H. Blair, N.S. (3½ Rex), 9⅘s.
T. Waring, M.S. (3½ Triumph), 19⅖s., beat H. Gough, N.S. (3½ Rex).
R. T. Ashton, N.S. (3⅜ Scott), had a walk over.
Byes.—E. J. Bolton, D.S. (7 Indian); A. Ainsworth, D.D. (3½ Rudge); G. Brough, D.D. (3½ Brough); J. C. Nevitt, M.S. (3½ Bradbury).

SECOND ROUND.

D. C. Bolton (4⅗s. start) beat E. J. Bolton.
A. Ainsworth (5⅘s.) beat E. C. Boissier.
C. E. Fowke (2⅘s.) beat G. Brough.
J. A. Prendergast (3⅖s.) beat V. Jobson.
A. E. Mitcham beat J. H. Higson (⅘s.)
T. Waring (⅘s.) beat E. C. Nevitt.
H. R. Wellings, N.S. (6 Dot-Jap), beat R.T. Ashton (76
Bye: W. B. Rudge.

THIRD ROUND.

A. Ainsworth (24⅘s. start) beat D. C. Bolton.
C. E. Fowke beat J. A. Prendergast (3⅖s.)
A. E. Mitcham beat W. B. Rudge (4⅕s.)
H. R. Wellings beat T. Waring (5s.)

SEMI-FINAL.

C. E. Fowke beat A. Ainsworth (3⅘s. start).
H. R. Wellings (⅕s.) beat A. E. Mitcham.

FINAL.

C. E. Fowke (3⅘s. start) beat H. R. Wellings.

Fastest times: E. J. Bolton, 61⅘s.; D. C. Bolton, 66⅗s
G. Brough, 68s.

At the conclusion of the trials, the competitors and th
friends, numbering several hundreds, were entertained to
by Mr. Bolton at Moor Court.

An office *al fresco*. Calculating the results of the speed trials in Grimsthorp Park. Anxious competitors awaiting the verdict. (See page 546A).

A CHAT WITH JAKE DE ROSIER.

FAR better than making a call at his hotel or looking in at the Hendee Mfg. Co.'s Great Portland Street premises, we found the great man sitting under one of the gloriously shady trees in Brookman's Park, watching the Herts County A.C. speed trials, and sat down and talked with him. We began by asking what sort of

Jake de Rosier, who arrived in England last week, and attended the Brookman's Park Speed Trials on Saturday.

impression England had made on him during the few ys he has been with us.

"I think it's fine," he said, "and your roads are just lendid—the best in the world. You know the reason the lecar don't go over there is because the roads are so bad. one moment the machine may be in the centre and the lecar wheel six inches below in a rut."

"But see here," interjected our friend, "do you know hat has impressed me most in this country?" And after veral futile guesses on our part he replied, "Why the od!" We expressed surprise. "Yes," he said, "the tter, milk, eggs, vegetables, and even steak tastes better an it does with us, and in the restaurants they don't just row it at you. I tell you, it's more like home."

The Roads in the States.

But we were not going to let our victim digress like this, d asked him if anything was being done about the roads the States.

"Why, yes," he said, "but it all depends upon the vernor of the State, as if he takes an interest in the estion much good work is done. In Massachusetts, New rk State, and Pennsylvania the roads are quite good, d some progress is being made in their construction."

"Are you going to race Collier?" we asked.

"Well," he replied, evasively, "I'll take on just anyone th an engine under 61in. (1,000 c.c.) after the T.T. race. t before that all I shall go in for is the Edinburgh run. ou see, I've been working very hard lately, and I'm out enjoy myself, and I badly need a rest."

"What is the most popular engine size in the States?" our surprise, De Rosier said, "The 7 h.p., especially in e West, where there are mountains. You see, in a country where there is sand and the roads are hilly much power is needed."

"We presume you have done more track than road work?"

"Yes. You see, I ride for a purpose, namely, to make money. But as regards the tracks themselves, what you people want over here is several tracks specially for motor cycle work, preferably wood, circular, and one-third mile to the lap. Wood, you know, is certainly faster than cement. Try and walk all day on cement, and you will feel pretty tired. Do the same thing on wood, and the result will be different—there is more give in it. And, by the way, do you know it costs me 200 dollars when I go for record? I have to pay judges, scorers, and timers, and have to pay for the watches being tested at a jewellers. No, there is no faking now. Only men with a reputation are accepted as officials, and they issue affidavits of the performance, and certificates have to be got for the watches. I admit things were rather muddled formerly, and I have heard of cases in which very inferior watches were used by the timers. *Mais nous avons changé tout cela.*" (De Rosier is a French Canadian.)

Valve Troubles almost Unknown.

"Do you ever get valve trouble on these record attempts?"

"No, I've never broken a valve or had a skip, and I assure you, without boasting, I rarely miss getting the record I am out for. Once I had waste oil put in my crank chambers, and that let me down, and occasionally I get tyre trouble. But that is a rare thing now."

"That is interesting," we assented. "What tyres do you use?"

"I am now running Goodyear Blue Streak. They are very fast, and I think they are the best."

"Is this your first visit to Europe?"

"Yes, it is, but I've travelled a good deal. I am always travelling all over the States, and as for experiences I have had plenty. The boys don't like me, and before now I've literally had to *fight* my way along. One thing, you know, appeals to me, and that is, I'm absolutely independent. I'm in no one's employ, just on my own, and I like it."

"But you confine yourself to one make—the Indian?"

"Yes, but that is only because I've found it the best."

"What gear," we asked, "do you use on these record rides?"

"Two and a half to one," De Rosier answered.

"Does the wind affect you at all on these small tracks?"

"No, not even on the mile to the lap tracks."

"You will find it different at Brooklands," we ventured.

"Yes, and I quite believe it; even in this short time I've noticed more weight in the wind over here."

"Well, we know you are resting, Mr. De Rosier," we said, "so we won't disturb you further"; and on taking leave we left the great man enjoying the fun and lazing away the glorious afternoon amid the beauties of English rural scenery, that cannot be excelled in any country in the world.

Sutton Coldfield A.C. Reliability Trial. J. Woodhouse is seen starting.

CURRENT CHAT

TIME TO LIGHT LAMPS

(GREENWICH)

June 1st	... ...	9. 5 p.m.
June 3rd	... ...	9. 7 p.m.
June 5th	... ...	9. 9 p.m.
June 7th	... ...	9.11 p.m.

June 29th

the date of *The Motor Cycle* special summer and T.T. number.

The Timing Competition.

The task of judging the replies to our offer of £2 2s. for the best suggestion for timing speed events is proceeding apace, and we hope to be able to announce the winner during this month.

The Suggested Road Records Association.

H. B. Karslake informs us that if a Road Records Association could be formed he is willing to act as hon. sec. *(pro tem.)* Those who are interested in the matter should communicate with Mr. Karslake at 10, Grove Place, Hampstead, N.W.

Advantages of a Motor Cycle.

The following interesting paragraph to motor cyclists is published in *The Land*, a journal circulating in Australia: "Monoro Shire Council has decided that the engineer's salary and equipment allowance be increased to £450 per annum from the date at which he commenced supervision duties with a motor cycle, and for such time as he performed such duties by motor cycle."

R.A.C. Associated Clubs' Race Meeting at Brooklands.

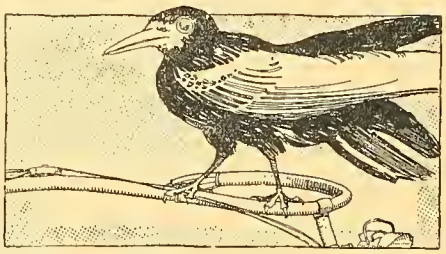
Nine events have been arranged for the meeting of the Associated Clubs to take place at Brooklands, on Saturday, July 29th. There will be two motor cycle races, one long distance and the other short distance. It is proposed that the day's event shall be followed by a supper in the members' dining room at Brooklands.

Another Long Coast Ride.

Harry Long will start on his coast ride on Whit-Monday. He expects to do about 200 miles per day, and is working from London to the South Coast, and then *viâ* Land's End and the West Coast up to John-o'-Groat's. Mr. Long will, during his ride, not cross any river by ferry, or by boat, but will go right round to the nearest bridge, unless this is absolutely impossible. He will further ride entirely unassisted, and will require no outside help in the way of checkers or guides. The checking throughout the ride will simply consist of postcards posted at different places and a book signed (with Mr. Long's photograph attached), and petrol receipts at the various towns to show consumption of petrol used during the ride. His machine will be a 3½ h.p. Triumph free-engine model with Kempshall tyres, and his luggage will consist of a suit of Dunlop overalls, a tent to sleep in, if hotel accommodation is not procurable, and the usual touring equipment.

SPECIAL FEATURES

The Spider Quad.
Hour Record Broken.
A Chat with De Rosier.
Results of Speed Trials.



A Reminder.

Entries for the Junior and Senior Tourist Trophy Races in the Isle of Man close on Saturday next, June 3rd. All entries should be sent to the secretary, Auto Cycle Union, R.A.C. Buildings, Pall Mall, S.W. A good number of replies are expected this week.

Anything and Everything for a Motor Cycle.

Among the varied assortment of articles offered in exchange for motor cycles and accessories in recent issues of *The Motor Cycle* were: A cinematograph, full theatre size; Kodak Panoram camera; two freehold plots of land at Epsom; diamond and sapphire half-hoop engagement ring; gentleman's double albert, also half hunter keyless silver lever; half-plate triple extension camera; cinematograph; young grey parrot; bedroom suite; cutlery; piano; pianola; gramophone; diamond cluster pin and stud; typewriter; a vulcanising plant; a revolver; sailing punt; magical apparatus; drapery and underwear; and a screw cutting lathe. Push cycles and cars were also offered in abundance.

A Third of a Mile Circular Track.

Mr. W. H. Wells told us on a rec occasion that a circular wood track r ning one-third mile to the lap wo shortly be built near London. He the money, and all that was needed a suitable site. This should certai help to popularise motor cycle rac Nothing of the kind has ever been s in England, except at Canning To and a really fast track situated in accessible position should do m towards giving the spectators a s for their money, and arouse enthusi generally over motor cycle racing.

The Whitsuntide Programme.

The activity in motor cycle circles week-end will be unparalled. There contests in England, Ireland, Scotla and Wales. Large entries have b received for all competitions, bes which numerous club tours have b arranged. Among the more impor events, the ever popular London-E burgh run has attracted 138 entries; th are forty names down for the Brookla motor cycle races on Whit-Monday, thirty-seven will compete in the Birm ham M.C.C. run to Land's End back. As we have already announ Fred Dover is to commence his c ride on a 3½ h.p. Premier.

General view of the Scarborough M.C. gymkhana, which was held on the New Marine Drive last Saturday

Can the Scott Climb Hills?

One hundred ascents of Sutton Bank were made by Frank Philipp, riding a 3¾ h.p. two-stroke Scott on the 28th inst.

Shelsley Walsh Hill-climb.

Entries for the Shelsley Walsh hill-climb for motor cycles, organised by the Birmingham M.C.C., close on the 3rd inst. at ordinary fees, and double fees up to next Monday.

Stolen Machines.

Ridden for a trial and not seen since, a 1909 Triumph, L.B. 541, engine No. 4,215, 4/2/09, Rom combination tyre on front wheel, Fox rubber-studded back, King of Road lamp, Stanley belt, new fastener, and double note horn. The rider is described as 5ft. 5in. in height, dark complexion, high forehead, and teeth rather irregular. Communications regarding this machine should be addressed to C. White, 105, Holmesdale Road, South Norwood.

Entries for the T.T. Race.

The following additional entries have been received by the Auto Cycle Union for the Senior T.T. Race since our last list was published:

Howard Smith, 3½ Triumph.
P. Butler, 4 Dot-Jap (twin).
Norman Holder, 4 Blumfield (twin).
J. A. Carvill, 3½ Triumph.
C. E. Murphy, 3½ Triumph.
J. de Rosier, 4½ Indian (twin).
Eric S. Myers, 5 Scott (twin).
F. Philipp, 5 Scott (twin).

The Junior T.T. entries are rather limited at present, but a large addition to the list is expected during the next few days.

Climbing Snaefell Mountain.

The *Isle of Man Times* of Friday last contains an account of a wonderful motor cycle feat in the island, where resides A. Woodman, the New Zealand rider who was injured during the practising for last year's T.T. race. He was living on the island all last winter, and rides a 7-9 Indian, and on Thursday, accompanied by a friend on one of the T.T. lightweights, with a low gear of 4½ to 1, the Indian being geared 7 to 1, it was decided to make the attempt. The following is an extract from the account of the ride in the *Isle of Man Times*: "Leaving Douglas about eleven o'clock, the journey to the Bungalow was easily and quickly accomplished. On arriving there Mr. Woodman was told that the path was all boggy; so the only way left was the railway track—and all those who know the track will be surprised that Mr. Woodman decided to ride up it. It took about half-an-hour to travel from the Bungalow Hotel to the very top of the mountain. Mr. Woodman had to stop once because of the big stones, and was thrown off the track twice, falling down the side of the mountain. But, nothing daunted, he again started the machine, and at last safely reached the top." It will be remembered that Woodman lost one of his legs as the result of the above-mentioned accident, which makes the performance the more remarkable.

£120 for Extra T.T. Prizes.

The Rom Tyre and Rubber Co., Ltd., ask us to state that they will give cash prizes for each of the Tourist Trophy Races to the first, second, and third riders in either race, provided Rom tyres are fitted to their machines. The cash prizes will be £30, £20, and £10 respectively.

FUTURE EVENTS.

June 2-5—M.C.C. London-Edinburgh Run and Return Journey for the M.C.C. Challenge Cup.
" 5 (Whit Monday)—Brooklands Meeting.
" 5—Dublin and District M.C.C. Open Reliability Trial to Lisburn.
" 10—A.C.U. Race Meeting.
" 10 Nottingham and District M.C.C. Open Speed Trial at Clipstone.
" 10—Birmingham M.C.C. Open Hill Climb.
" 10-11—Bradford M.C.C. Bradford to London and back. Twenty-four Hours' Open Reliability Trial.
" 17 M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
" 29—"The Motor Cycle" Summer and T.T. Number.
" 30 Junior T.T. Race in the Isle of Man.
July 3—Senior T.T. Race in the Isle of Man
" 4—Kilometre Speed Trial on the Douglas Promenade, Isle of Man

Police Traps.

Motorists are particularly warned that practically all ten-mile limits in Westmorland, especially in the vicinity of the Lakes, are being worked.

Reports state that the police are not to be complimented on their timing methods, although the trap at Ambleside is fairly satisfactorily worked.

We are informed that the police are very active at Highgate. A quarter-mile trap is being worked week days and Sundays between Highgate and East Finchley Stations, and two measured distances are being worked in the Archway Road.

On the Bury Road, between Manchester and Bury, one between Broughton Shops and Kersal Bar, and another between Whitefield and Prestwich.

Kennington Road, S.E., starting where Lambeth Road crosses and finishing 220 yards further on towards "The Horns."

Tourist Trophy Notes.

The Isle of Man people are annoyed that the A.C.U. has threatened to disqualify T.T. entrants who practise on the T.T. course before June 22nd. They consider a week insufficient for practising on such a difficult course; besides, they want visitors and their money as early as possible.

It is said that there are four T.T. competitors practising incognito in the island.

Messrs. J. R. Nisbet and F. Straight will be visiting the Isle of Man this week-end to make preliminary arrangements for the race week.

The following additional amounts have been contributed to the Tourist Trophy Fund:

	£	s.	d.
Putney M.C.C.	0	10	0
Miss Hind	1	1	0
Continental Tyre Co. ...	2	2	0
John Gibson	0	10	0
Temple Press	5	5	0
Rom Tyre Co.	5	5	0
P. Marians	1	1	0
Bosch Magneto Co.	3	3	0
A. J. Sproston	0	10	6
Manchester M.C.	2	2	0
E. W. Brewerton	1	1	0

A MOTOR CYCLIST ASCENDS SNAEFELL BY THE MOUNTAIN RAILWAY TRACK.

(Left) Alan E. Woodman, the one-legged rider of a twin Indian who climbed Snaefell by the mountain railway track last Thursday.

The Herts. County Open Speed Trials.

J. S. Holroyd (Motosacoche) leads off the ball. The Bell Bar of Brookman's Park in the background.

THE motor cycle section of the Herts County A.C. owe a deep debt of gratitude to Mr. H. L. Ganssen, the kind owner of Brookman's Park, who threw open his grounds to the members of the club and their friends on Saturday afternoon last. The park is one of exceptional beauty, and is magnificently timbered.

The course starts from the Bell Bar (southern entrance of the grounds), and the actual point of departure was just inside the gates. The road descended a gradient of about 1 in 16, and then entered a wood. Half-way through just where the road was level there was a small hump at a bridge, and then the course took a not very severe bend, and rose steadily for the remainder of its length, culminating in a gradient of about 1 in 16-17.

A Rough Surface for Racing.

The road was smooth in the sense that there were no bumps or pot-holes, but the actual surface was terribly rough and loose, becoming worse towards the end of the competition. Some of the bad places had been treated with tar, but insufficient attention had been given in this respect. As the club has the use of the road whenever it is needed, a suggestion has been put forward that it should be put into proper order at the club's expense.

Mr. C. C. Cooke deserves the warmest congratulations on his efforts, as the organisation was excellent on the whole. No one except a few officials was allowed on the course previous to the start; competitors entered at Bell Bar, and spectators at the entrance near the 17th milestone on the Great North Road, arriving at the finish. Policemen and boy scouts provided with red and white flags were stationed along the course, and everything that was possible was done to render the meeting a success. The only point at which criticism may be levelled was the delay in starting both divisions. The weather conditions were absolutely perfect, and the sun shone brilliantly all the time, and a light breeze blew across the course. The length of the timed distance, at each end of which Messrs. D. K. Hall and F. Straight officiated, was four-fifths of a mile.

Negotiating the Corner.

Reverting to the corner, this, as mentioned before, was easy, but at a high rate of speed it called for careful negotiation, and all but the ultra lightweights had to switch off. It was at this corner that Newsome specially distinguished himself. There were three tumbles. Gwynne (7 h.p. Indian) apparently failed to switch off, could not stop his engine, took the corner wide, mounted on to the grass, and fell off at the rear of his machine. The latter careered riderless across the greensward, and then turned a complete somersault and stopped. Poor Gwynne was rather badly cut about and sustained a sprained wrist. This was the first exciting incident in Class A, but in Class B Croucher (Kerry Abingdon) and A. J. Dixon (7 h.p. Rex) fell at the corner. Both riders escaped, but of the two machines the Kerry suffered the most damage. The competition was run off in two classes, A and B. Those machines entered in Class B had to conform strictly to touring requirements except where otherwise stated. The results were worked out on the following formula : $\frac{C.C \times T^2}{(T + 50)}$

Messrs. J. W. G. Brooker and E. B. Dickson, the two judges, worked hard and well, and the results of their strenuous efforts were as follows :

Division A, Class I. Wilberforce's 2¼ h.p. N.L.G. was overweight, and was transferred to Class III. Class III. J. W. Dixon (3½ h.p. Motocrat) was disqualified for having only one brake. S. T. Tessier (5 h.p. Bat), Classes IV. and VII. was disqualified for having only one brake which was not in proper working order.

In Division B. Class I., Fowles's 1½ h.p. Martin-Jap did not conform to touring requirements. Class II. Wilberforce, owing to the weight of his machine, was transferred to Class IV. In Class III. Gutteridge (Triumph), Newsome (Triumph)

The Herts. County A.C. Open Speed Trials.—

One of the competitors coming out of the avenue. Behind him is a miniatnre Ballig Bridge which competitors jumped in the same way as in the T.T. race.

. W. Dixon (Motocrat), and A. J. Dixon (Rudge) were disualified for their machines not conforming absolutely to ourist requirements, while Deacock (N.L.G.) and Slaughter L.M.C.), as well as Wilherforce, ran in Class IV.

Results on Time.

DIVISION A.

CLASS I.—Lightweights 100 lbs., 300 c.c.

Rider and machine.	Bore and stroke.	M.	S.
H. Berwick (2 Humber, 1 cyl.) ...	60 ×70 ...	1	13 3/5
A. G. Fenn (2 Humber, 1 cyl.) ...	60 ×70 ...	1	21 4/5
J. S. Holroyd (2½ Motosacoche) ...	64 ×75 ...	1	23 3/5

CLASS II.—Junior T.T. models 120 lbs., 340 c.c.

S. Wright (3 Humber, 2 cyl.) ...	60 ×60 ...	1	4 2/5
H. V. Colver (2¾ Enfield, 2 cyl.) ...	53 ×75 ...	1	25 1/5

CLASS III.—Single-cylinder, 600 c.c.

W. F. Newsome (3½ Triumph) ...	85 ×88 ...	0	53 2/5
H. Lister Cooper (3½ Triumph) ...	85 ×88 ...	0	55 2/5
C. C. Cooke (3½ Triumph) ...	85 ×88 ...	0	57

CLASS IV.—Twin-cylinder, 750 c.c.

Hal Hill (5 Bat)	85.5×58 ...	0	54 4/5
A. J. Luce (5 Bat)	85 ×65 ...	0	58 1/5
G. S. Carter (5 Matchless) ...	85 ×65 ...	0	59 2/5

CLASS V.—Any single, fastest time to win.

W. F. Newsome (3½ Triumph) ...	85 ×88 ...	0	53
H. Lister Cooper (3½ Triumph) ...	85 ×88 ...	0	56 1/5
C. C. Cooke (3½ Triumph) ...	85 ×88 ...	0	57 2/5
J. H. Slaughter (3½ L.M.C.) ...	85 ×88 ...	0	57 2/5

CLASS VI.—Any twin, fastest time to win.

Hal Hill (5 Bat)	85.5×58 ...	0	54 1/5
A. J. Luce (5 Bat)	85 ×65 ...	0	55
H. F. Hunt (7 Rex)	84.5×89 ...	0	55 4/5

F. Hunt (7 Rex) lost his belt half way down the course.

CLASS VII.—Any machine, fastest time to win.

A. J. Luce (5 Bat)	85 ×65 ...	0	54 2/5
W. F. Newsome (3½ Triumph) ...	85 ×88 ...	0	55 1/5
Hal Hill (5 Bat)	85.5×58 ...	0	55 1/5
C. M. Simpson (7 Indian) ...	82.5×93 ...	0	55 4/5

CLASS VIII.—Passenger machines.

W. H. Wells (7 Indian and s.c.) ...	82.5×93 ...	1	22 1/5
B. T. Rice Pyle (7-8 Bat and s.c.)	85 ×85 ...	1	35 2/5
F. A. Hardy (5 V.S. and s.c.) ...	75 ×75 ...	1	36 4/5

DIVISION B.—STANDARD TOURING MODELS.

CLASS I.—Lightweights, 120 lbs., 300 c.c.

A. G. Fenn (2 Humber)	60 ×70 ...	1	16
H. Berwick (2 Humber)	60 ×70 ...	1	16 3/5
J. S. Holroyd (2½ Motosacoche) ...	64 ×75 ...	1	31 3/5

CLASS II.—Junior T.T., 146 lbs., 340 c.c.

S. Wright (2 Humber)	60 ×70 ...	1	43
H. V. Colver (2¾ Enfield, 2 cyl.) ...	53 ×75 ...	1	5 2/5
J. Fowles (1¾ Martin-Jap) ...	76 ×59.5 ...	1	25

CLASS III.—Standard touring singles, 600 c.c.

1. S. Crawley (3½ Triumph) ...	85 ×88 ...	1	1 2/5
2. C. C. Cooke (3½ Triumph) ...	85 ×88 ...	1	4
3. R. Croucher (3½ Kerry-Abingdon)	85 ×88 ...	1	8 1/5

CLASS IV.—T.T. singles, 600 c.c.

1. S. Crawley (3½ Triumph) ...	85 ×88 ...	*0	50 2/5
2. W. F. Newsome (3½ Triumph) ...	85 ×88 ...	0	55 2/5
3. J. H. Slaughter (3½ L.M.C.) ...	85 ×88 ...	0	57 2/5

CLASS V.—Twin-cylinders, 750 c.c.

1. G. S. Carter (5 Matchless) ...	85 ×65 ...	0	58
2. H. V. Colver (2¾ Enfield) ...	53 ×75 ...	1	4 2/5
3. C. M. Down (2¾ Enfield) ...	54 ×75 ...	1	14 1/5

CLASS VI.—Any single from above.

1. W. F. Newsome (3½ Triumph) ...	85 ×88 ...	0	55 2/5
2. C. C. Cooke (3½ Triumph) ...	85 ×88 ...	1	0 1/5
3. S. Crawley (3½ Triumph) ...	85 ×88 ...	1	0 3/5

CLASS VII.—Any twin-cylinder up to 1,000 c.c.

1. A. J. Luce (5 Bat)	85 ×65 ...	1	0 1/5
2. H. V. Colver (2¾ Enfield) ...	53 ×75 ...	1	4 3/5
3. B. T. Rice Pyle (7-8 Bat) ...	85 ×85 ...	1	16 3/5

CLASS VIII.—Any machine, fastest time to win.

1. A. J. Luce (5 Bat)	85 ×65 ...	0	56
2. C. C. Cooke (3½ Triumph) ...	85 ×88 ...	1	1
3. B. T. Rice Pyle (7-8 Bat) ...	85 ×85 ...	1	3 4/5

*Supposed error on part of timekeepers.

100 ASCENTS OF SUTTON BANK IN 7½ HOURS.

At the beginning of the week Frank Philipp, riding a standard 3¾ h.p. Scott, geared 4.4 and 7.3 to 1, created a new record for Sutton Bank. Starting at 7.30 a.m. and finishing at 3.1½ p.m., he successfully ascended and descended no less than 100 times, thus travelling 190 miles in 7h. 1½m., his actual running time being a little less owing to stops for petrol and oil, a spill at the corner at the 63rd lap, and the tearing out of the front wheel tyre valve at the 74th lap, no doubt owing to the continuous use of the front brake on the descents, which were of a hair-raising nature. It is estimated the gears were changed about 900 times, first at the start, then at the trough, over the 3.9 portion, at the corner, and finally just before the top, at the summit. The day was extremely hot, and it speaks well for the water-cooling arrangements when we state that no fresh water was added during the whole of the trial. The first stop was at lap 30 for supplies, and up to then the engine had not been stopped once. The fastest lap was the 100th, and took 4m. 5⅘s., truly a remarkable performance.

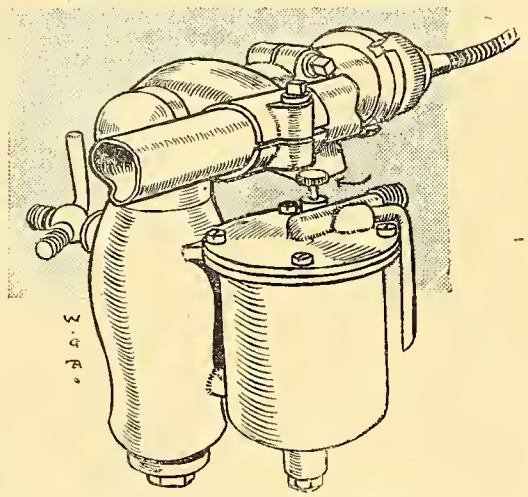
The average speed including stops works out at 25.3 miles per hour.

J. Slaughter (L.M.C.) making good time.

The N.S.U. Automatic Carburetter.

THE N.S.U. Co. have recently introduced a new automatic carburetter, the principal features of which will be gathered from the accompanying description and sketches. The principle upon which it works is that there is a fixed air supply past the jet, whilst the extra air enters through a port controlled proportionately with, and at the same time as, the throttle.

The idea, is, of course, by no means new, but in the N.S.U. its application is somewhat different from anything we have seen before. On the left-hand side of the carburetter, as seen in the first illustration, is a vase-shaped body, which forms the choke tube and provides a warm air jacket around it. This is furnished by an annular chamber surrounding the choke tube with a bypass from the exhaust pipe, the egress of the gases being effected through the small hole shown. The jet, with which is incorporated a large size filter, is one of the vertical type, and is removable from the choke tube by the undoing of a single nut. The fixed air



The complete N.S.U. automatic carburetter.

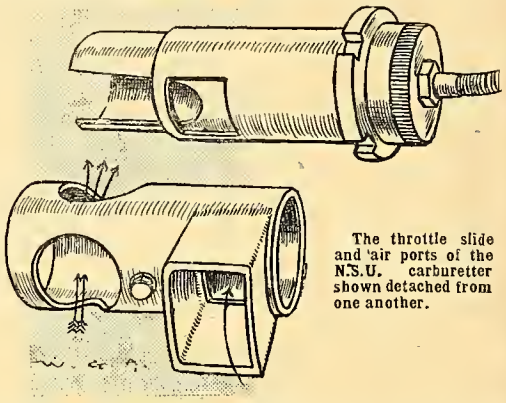
supply flows past the jet in the usual manner, and enters the choke tube through a circle of holes in the base.

The Carburetting Chamber.

At the top of the choke tube the rich mixture so formed meets with an admixture of pure air which enters the horizontal mixing tube through the small cowl marked with an arrow. In this horizontal mixing tube works the adjustable air slide which controls the amount of air admitted by opening or closing, as the case may be, the orifice of the air cowl. The complete mixture passes into the inlet pipe (in the sketch a twin inlet pipe is shown) through a shell-like duct. As shown in the second illustration the throttle slide, which also performs the office of an air slide, is in the form of a tube sliding inside an extension of the horizontal mixing tube above mentioned. As it cuts down the throttle opening, so also it controls the air opening.

It will, however, be realised that under different conditions of weather and temperature some alteration has to be made in the volume of extra air admitted, and this is accomplished in the simple manner shown in the sketch, which depicts the two portions of the horizontal mixing tube taken apart. The lower half of the figure represents the extra air cowl, and the fixed portion of the horizontal mixing tube, more or less diagrammatically. The entry of additional air is indicated by a single arrow, that of the rich mixture from the choke tube by two arrows, and the final egress of the complete mixture into the inlet pipe by three arrows. That portion of the horizontal mixing tube shown in the upper part of the sketch is furnished with a square hole, which registers with a similar port covered by the air cowl.

The size of the additional air port controlled by the air slide can, therefore, be altered more or less permanently by rotating slightly the upper tube inside the lower one, and locking it with a clip. The arrangement amounts to this, that, instead of having a separately controllable air slide, the size of the air port is altered, and can, therefore, be worked by a slide with a fixed throw. To prevent the throttle slide



The throttle slide and air ports of the N.S.U. carburetter shown detached from one another.

turning round with its outer sleeve when the air orifice is being adjusted, the former is provided with a horizontal slot which engages with a guide screw. The throttle slide is so arranged that when the throttle is almost closed the admission of extra air is entirely cut off, and all the air for the mixture in entering has to pass the jet.

MANCHESTER CLUB'S HILL-CLIMB.

The results of the above club's hill-climb at Hayde Bridge, between Woodhead and Holmfirth, are as give hereunder. Result on handicap and formula :

Class I.—Twins.	Time.
1. Percy Butler (4 h.p. Dot)	2m. 38⅕s.
2. A. J. Moorhouse (7 h.p. Indian) ...	1m. 59⅖s.
3. F. Sirett (5 h.p. Indian)	3m. 20⅖s.

Class II.—Single-cylinders.	Time.
1. S. W. Philpot (2 h.p. Humber) ...	3m. 42⅕s.
2. H. J. Scale, jun. (3½ h.p. J.A.P.) ...	2m. 31⅘s.
3. Hugh Gibson (3½ h.p. Triumph) ...	2m. 29⅖s.

BRADFORD M.C.C. HILL-CLIMB FOR DYSON SHIELD.

Finish of the final. Percy Shaw (3½ h.p. P. and M.) beat H. D. Shaw (7 h.p. Indian) by two lengths. The photograph was taken just in front of the finishing line, so one can imagine the speed of the Indian. The two riders are not related.

THE HOUR RECORD.

Surridge and the Rudge-Whitworth accomplish the coveted 60 Miles in the Hour.

SURRIDGE was so near beating the hour record on the occasion of his last attempt that his ultimate success was practically a certainty. Surridge, his helpers, and the timekeepers were at Brooklands about 3 p.m. on Thursday last, but, owing to the heat and glare when riding round the track, a start was not made until after tea. The first attempt was made with an experimental exhaust valve, which broke at the end of the fifth lap. These five laps were ridden at a very fast speed, and the times at the end of the fourth and fifth laps constitute records.

Lap.	Time. M. S.	m.p.h.
1	2 46⅕	= 58.94
2	2 33	= 63.95
3	2 31	= 64.79
4	2 32⅗	= 64.12
5	2 40⅘	= 60.84

A new valve was fitted, and Surridge made his second effort, the first lap being ridden at 55 m.p.h. and the second at 58½ m.p.h. This was too slow a speed to enable him to beat the previous best, so he wisely stopped and made a fresh start a little later.

V. J. Surridge (3½ h.p. Rudge), who covered 60 miles 783 yards in an hour.

The Third Attempt Successful.

His third and successful effort to beat Newsome, the holder, was begun well, and at the end of the first lap he was travelling at a splendid pace. He made an attempt to maintain an average speed just sufficiently high to enable him to beat the record, and from time to time what he had been doing was signalled to him. He was, however, unable to keep to a steady average, and his lap times fluctuated a good deal. This throws no reflection of any kind on the running of the machine (which was perfect), but emphasises the fact that to run to a schedule when travelling at a great rate is extremely difficult. For example, if the rider desires to average 59 miles an hour the error of one second makes a mile an hour difference, and an error of several seconds makes a very considerable alteration in the average. Between the twentieth and twenty-first laps Surridge stopped for more lubricating oil, but on restarting he began to make up time, and as a result covered the twenty-second lap in 2m. 27⅕s., which is at the rate of 66.47 miles an hour—the fastest lap ever done on Brooklands track with a 500 c.c. engine. Surridge finished the hour's ride without further incident, and at its conclusion had covered 60 miles 783 yards, beating Newsome's (3½ h.p. Triumph) record, which was accomplished on April 26th last, by 1,065 yards. His last two laps were covered at the rate of over 65 and 66 miles an hour respectively, which proves how well the engine was running.

Surridge, who was timed by Mr. A. V. Ebblewhite, rode the identical 3½ h.p. Rudge-Whitworth 85 by 88 mm. (499 c.c.) on which he beat the 50 miles record on May 12th. This machine is fitted with an engine the same in all respects as those supplied to the public, as the Rudge firm makes a particular point in adopting all the improvements which are the result of extended efforts by their staff of test riders at Brooklands.

We were told that the valve used in the actual record was of standard pattern and material, and these are now being case hardened. The only part of the whole machine which differed in any way from standard practice was the tank, which was larger.

The weather conditions were perfect, the sun shone brilliantly and a light breeze was blowing. It is Surridge's intention to improve if possible on this record and continue for the 100 miles and two hours at an early date.

Below are the lap times:

Laps.	M. S.	m.p.h.	Laps.	M. S.	m.p.h.
1.	2 52	= 56.88	13.	2 45⅕	= 59.30
2.	2 36	= 62.71	14.	2 41⅕	= 60.99
3.	2 40	= 61.15	15.	2 38⅖	= 61.76
4.	2 46⅕	= 58.94	16.	2 38	= 61.92
5.	2 43⅕	= 60.2	17.	2 37⅖	= 62.16
6.	2 38	= 61.92	18.	2 40⅘	= 60.84
7.	2 40⅖	= 60.99	19.	2 39⅗	= 61.30
8.	2 44⅕	= 59.66	20.	2 53	= 56.55
9.	2 44⅗	= 59.45	21.	3 3⅕	= 53.46
10.	2 40⅖	= 60.99	*22.	2 27⅕	= 66.47
11.	2 35⅘	= 62.79	23.	2 29	= 65.31
12.	2 39	= 61.53			

*Record lap.

Class C record, 1 hr., 60 miles 783 yards.

Fastest flying lap record, 2 mins. 27⅕ secs. = 66.47 m.p.h.

Also record for fourth and fifth laps on a previous trial same afternoon: Four laps, 10 mins. 22⅘ secs.; five laps, 13 mins. 3⅖ secs.

THE CHATER-LEA QUADCAR.

WE had a recent opportunity of inspecting the new Chater-Lea quadcar, which was on the eve of completion. The chassis of this interesting little machine is strongly constructed, and is a fine piece of tubular framework. It is well trussed underneath, and the cylindrical tank, which is carried in the forward part of the frame, is held in position by a strong tubular support. No torque rod is used, as the rod is taken through the springs. The back axle is gear driven, and the Chater-Lea three-speed gear box without reverse is fitted, in the latter and behind it there is an universal joint of standard design, while the propeller-shaft is provided at its rear end with a sliding universal joint. The propeller-shaft brake is of the external type and is controlled by a side lever, while the internal expanding brakes on the rear wheels are controlled by a pedal. The steering is direct, and the body is of wicker, comprising two bucket seats and scuttle dash.

Entries for the London-Edinburgh Run.

THE M.C.C. have again secured a record entry for the London-Edinburgh run. Last Whitsuntide the motor bicycles totalled 98, while this year they are 115 as follow. Last year's sidecar total was 16.

Rider and machine.

1. H. G. Bell (5-6 F.N., *4 cyl.*)
2. L. A. Baddeley (4½ Baddeley, *2*)
*3. A. B. Hill (3½ Rudge, *1*)
4. D. S. Baddeley (6 Baddeley, *2*)
*5. F. Flint (3½ Zenith, *1*)
6. C. Watson (5-6 F.N., *4*)
*7. Cyril Bailey (Clyde)
†8. T. S. V. Phillips (2½ Motosacoche, *1*)
9. Southcomb May (5 Portland-Jap, *2*)
10. R. Clark (5 Indian, *2*)
*11. A. Sumner (3½ Ariel, *1*)
12. G. Ward (3½ Arno, *1*)
13. P. Bentley (3½ Triumph, *1*)
14. C. S. Lake (3½ Arno, *1*)
*15. J. W. Woodhouse
16. M. Duke (3½ Triumph, *1*)
†17. E. Pond (3½ Rudge, *1*)
18. E. Gwynne (7 Indian, *2*)
*19. H. Greaves (2¾ Enfield)
20. E. B. Dickson (8 Bat, *2*)
21. V. Olsson (8 Oxted-Jap, *2*)
22. E. Cherry (3½ Triumph, *1*)
*23. W. Gibb (2¾ Douglas, *2*)
24. R. Brice (3½ Brown, *1*)
*25. Eli Clark (2¾ Douglas, *2*)
26. B. Marians (3½ P. and M., *2*)
27. P. Shaw (3½ P. and M., *1*)
28. G. Higgs (3½ Triumph, *1*)
*29. H. Karslake (4 Dreadnought, *1*)
†30. H. Millar (5-6 F.N., *4*)
*31. R. M. Stallebrass (2¼ F.N., *1*)
32. H. R. Whitmore (3½ Rudge, *1*)
†33. R. Brown (3½ Lincoln-Elk, *1*)
34. P. Grout (2¾ Douglas, *2*)
*35. G. L. Fletcher (2¾ Douglas, *1*)
36. W. Pratt (3½ P and M., *1*)
*37. W. Bentley (5 Indian, *2*)
38. W. Cooper (3½ Brown, *1*)
*39. E. Kickham (2¾ Douglas, *2*)
40. H. W. Turner (3½ Triumph, *1*)
*41. R. Ellis
42. S. T. A. Oldfield
43. R. Croucher (3½ Kerry-Abingdon, *1*)
44. A. G. Orchard (3½ Premier, *1*)
45. S. Webb (3½ Bradbury, *1*)
46. F. Watson (3½ Triumph, *1*)
*47. H. A. Cooper (3½ Bradbury, *1*)
†48. F. W. Applebee (3½ N.S.U., *1*)
*49. C. Burney (3½ Rudge, *1*)
50. H. Scott (3½ Rudge, *1*)
*51. G. Brough (3½ Brough, *1*)
†52. A. Webster (2½ Hobart, *1*)
*53. G. Reed (3¾ Scott, *2*)
54. F. Wasling (2¾ Enfield, *2*)
55. G. Raper (6 N.S.U., *2*)
56. W. Atkinson (4 Cheviot, *1*)
*57. H. Hornsby (4 Cheviot, *1*)
†58. J. Le Grand (5 Rex, *2*)
*59. G. Purchase (3½ Triumph, *2*)
†60. W. Jacobs (5 Rex, *2*)
*61. J. S. Holroyd (2½ Motosacoche, *1*)
†62. — White (7 Rex, *2*)
*63. A. Sproston (3½ Rudge)
†64. W. Elce (3½ Rudge, *1*)
*65. F. C. Wasley
†66. Pither (5 Rex, *2*)
*67. G. Gray (3½ Rudge, *1*)
68. C. Stanley (5 Indian, *2*)
*69. R. C. Owen-Wells (3½ Bradbury)
70. G. Stevens (2½ A.J.S.)
*71. J. R. Haswell (3½ Triumph)
72. J. Stevens (2½ A.J.S., *1*)
*73. V. Deacock (4 N.L.G., *1*)
†74. A. Mabon (3½ Rudge, *1*)
†75. N. Dear (2 Humber, *1*)
†76. J. Davison (3½ Triumph, *1*)
†77. E. Lacon
78. G. Griffiths (2¾ M.R.)
*79. G. W. England (2¾ M.R., *2*)
†80. S. Scarborough (3½ Brough, *1*)
*81. F. North (3½ Ariel, *1*)
82. R. O. Clark
*83. G. Boswell (3½ Ariel, *1*)
84. C. Smith (3½ Ariel, *1*)
85. F. Gibbons (3½ Triumph, *1*)
86. Roy Walker (2½ New Hudson, *1*)
*87. N. Hemy (3 Wanderer)
88. E. Chaytor (3½ Humber, *1*)
89. W. Price (5 Rex, *2*)
90. H. Dawson (5 Rex, *2*)
*91. A. Robbins (3½ Humber, *1*)
92. J. Culley (3½ Triumph, *1*)
93. H. E. Hull
94. J. Begg (2¾ M.R., *2*)
*95. J. L. Love
96. Lovett
97. Glynn Rowden (3½ Triumph, *1*)
*98. H. Mussell (7 Rex, *2*)
99. J. Haslam (3½ Zenith-Gradua, *1*)
100. L. Sower (3½ Premier, *1*)
101. H. Swift (2¾ Douglas, *2*)
102. A. Clayton (3½ Humber, *1*)
103. F. Taylor, jun. (7 Indian, *2*)
†104. R. Mundy (2 Alcyon, *1*)
†105. H. Slatter (2 Alcyon, *1*)
106. H. R. Pratt (3½ Arno, 1)
107. H. G. Farrall (3½ Triumph, *1*)
108. S. T. Tessier (5 Bat, *1*)
109. Maybury (3½ H.A.L., *2*)
110. W. Taylor (3½ Arno)
111. Duncan (3½ Rex, *1*)
112. Lowett
113. J. De Rosier (7 Indian, *2*)
†114. O. Godfrey (7 Indian, *2*)
†115. W. F. Guiver (3½ Kerry-Abingdon, *1*)

SIDECARS AND QUADCARS.

117. W. H. Wells (7 Indian and sc., *2*-cyl.)
118. L. Vedy (Salmay and sc., *2*)
119. Lee Evans (7 Indian and sc., *2*)
120. W. Barratt
121. A. E. Catt (3½ Triumph and sc., *1*)
122. Hugh Gibson (3½ Bradbury and sc., *1*)
123. George Wray (3½ Bradbury and sc., *1*)
124. John Godsal
125. J. L. Barratt
126. C. Percival
127. A. R. Abbott
128. W. E. Haynes
129. J. Chater-Lea (8 Chater-Lea and sc.)
130. W. Chater-Lea (Chater-Lea quadcar)
†131. H. F. J. Morgan (Morgan runabout)
132. Frank Thomas (7 G.O.K. and sc., *2*)
†133. J. W. E. Stemberg (3¾ Scott and sc., *2*)
†134. Frank Smith (5-6 Clyno and sc., *2*)
†135. C. F. Halsall (5-6 Clyno and sc., *2*)
†136. Harold Williamson (7 Rex sidette. *2*)
†137. E. G. Proctor (7 Indian and sc., *2*)
†138. E. B. Ware (8 Chater-Lea and sc., *2*)

*Denotes entrant for Motor Cycling Club Challenge Cup.
†Denotes entrant for return journey gold medal.

COMPLIMENTARY DINNER TO A. E. CATT.

On Thursday, May 25th, the Northants M.C.C. entertained Mr. A. E. Catt to dinner at the Stag's Head Hotel, Northampton, in celebration of his latest record—2,557 miles in six days. The chair was occupied by Alderman S. Yarde, Mayor of the town and president of the club, who formally presented Mr. Catt with a very handsome gold watch and chain and an illuminated address on behalf of his fellow members and friends. Mr. M. J. Schulte then asked Mr. Catt to accept a very handsome silver tea service as a slight tribute from the Triumph Cycle Co. Mr. Schulte stated that Mr. Catt was a man of very different kidney from many so-called "amateurs," as he paid full price for his machines, made all his arrangements for his record rides, and neither asked nor expected any reward from the makers of his machine when he was successful.

Incidentally Mr. Schulte expressed his strong disapproval of any further attempts upon the End-to-end record; he should greatly deprecate the prolonged thirty hours' "blind" at track-racing speed which was nowadays essential to success. These remarks were full of interest in view of the rumours that a private owner of a Triumph is even now contemplating the classic journey.

Mr. Catt, in acknowledging the presentations, gave a long and humorous account of his experiences, but stated that the physical strain was so enormous that he would not attempt another ride of the kind for £1,000. Mr. Catt then presented each of the guests with a souvenir booklet. The toast of the "Press and Visitors" was acknowledged by Mr. H. B. Davies.

Scene at the start of the Pontefract Speed Trials. Dr. Dolan is seen mustering the competitors (see page 555).

CLUB NEWS

Pontefract Speed Trials. J. Dunk (T.T. Triumph) making fastest time of the day.

The winner, L. Kershaw (3½ h.p. P. & M.), at the finish.

Pontefract M.C.C.

Byron Park, Ferrybridge, was kindly lent by Sir John msden for the club's annual speed trial on the 25th ult. essrs. S. S. and F. Campbell acted as judges, and the ults were: (1) L. Kershaw (3½ h.p. P. and M., Carnes phy); (2) H. Marshall (3½ h.p. P. and M.); (3) T. nk (3½ h.p. T.T. Triumph). Prize for fastest time, T. nk.

York County M.C.C.

n the speed trials held on the 20th ult., the winner of the harge" Cup and gold medal proved to be C. H. Benn h.p. Triumph), J. A. Prendergast (3½ h.p. Rudge-Whitrth) being second.

Sheffield and Hallamshire M.C.C.

Last Saturday a team trial was held as a preliminary to M.C.C. team trial. Competitors were required to ride nd a course fifty miles without watches or speedometers. to maintain a speed of twenty miles per hour. There e three teams of six riders each, and that captained by Bellamy proved to be the winner.

Cornwall M.C.C.

reliability run will be held on Whit-Monday, starting n Truro at 10 a.m. for Torpoint, *viâ* Fraddon, Bodmin, Liskeard and back, for a gold medal offered by the nty Rink Company. Mr. F. G. Wheler has also offered ther prize.

North Middlesex M.C.C.

rrangements have been made for a trip to Weeley, near cton, starting from the "Manor House," Finsbury Park, next Saturday at 10 a.m., and returning on Monafternoon. The headquarters will be the "Weeley ck Boy," Weeley. For the benefit of those who cannot t on Saturday morning, a second party will leave the anor House" at 4 p.m.

Manchester M.C.

he first official hill-climb of the year, which took place Saturday last, was distinctly unfortunate in regard he weather, for a heavy thunderstorm with torrential continued all the afternoon, besides rendering course heavy and slippery, it caused much disfort to all competitors, officials, and spectators. re was a record entry. The hill was the usual for the club, and is situated near Woodhead, the summit g 1,725 feet high. The entries were eighteen in the le-cylinder class, twelve in the twin, and five in the enger or sidecar class. The fastest time was accomied by A. J. Moorhouse, 7 h.p. Indian, who took 59⅖s., a record for the hill. The winners on formulæ be reported next week.

Westmorland M.C.C.

It is more than probable that a six a side hill-climbing contest will take place in August, between the following counties, Cumberland, Northumberland, Durham, Lancashire, Yorkshire, and Westmorland; the leading club in each county will select its fastest men, and it is proposed to have no conditions—only time is to count. Any communications *re* this contest should be sent to C. B. Robinson, hon. sec. Ferney Green, Kendal.

Edinburgh and District M.C.

For the first reliability trial for motor cycles and cars on the 23rd ult. sixteen entries were received, of which eight motor cycles, three sidecars, and three cars started. R. H. Mowat (3½ Rudge) made the best performance. J. P. Morrison (8 Bat and sidecar) proved the most reliable of the passenger combinations. Others gaining certificates were T. L. Aitken (3½ Triumph), J. Gerard (3½ Bradbury), and A. W. R. Downie (3½ Brown). The following lost marks but finished in good time: J. N. Scott (5 F.N.) and N. MacMillan (9 Sizaire Naudin).

Walthamstow M.C.

The Stanton Cup competition was held on the 28th ult. over a course of about 134 miles—Walthamstow to Thetford and back. Competitors were timed at two secret milestones out

Manchester M.C. Hill-climb. P. Platt (3½ h.p. Bradbury), winner in the passenger class, crossing the starting line. Note the wet state of the surface.

W. Heaton (2½ h.p. A.J.S.) starting in the Manchester M.C. hill-climb.

and home, also at Thetford and finish. All competitors whose error did not exceed 4m. over the four checks received silver medals. The results were as follow:

Silver Cup.

	Rider and machine.	Error. M. S.
1.	G. Henbrey (5 A.C. tricar)	0 20⅗

Silver Medals.

2.	A. T. Peppercorn (3½ Bradbury)	0 28⅘
3.	F. A. Applebee (3¾ Scott and s.c.) ...	1 14⅗
4.	R. J. Lisles (3½ White Arrow)	1 40
5.	J. Kerr (3½ Zenith)	1 50
6.	J. Henbrey (7-9 V.S. and s.c.)	2 18⅕
7.	A. G Peppercorn (3½ Bradbury) ...	2 26⅕

Shropshire M.C.C.

A non-stop reliability trial for a Michelin Trident cover took place on May 25th over a thirteen and a quarter miles course, which had to be covered four times at 20 m.p.h. without using watch or speedometer. There were nine starters, of whom two retired in the first circuit with punctures. Four riders made non-stops, the results being as follow:

	Rider and machine.	Time taken. H. M.	Error. M.
1.	A. G. Benham (6 h.p. Riley) ...	2 39 ...	0
2.	H. G. Potts (6 h.p. Bat-Jap) ...	2 42 ...	3 slow
3.	R. D. Newill (3½ h.p. Triumph)	2 30½ ...	8½ fast
	J. A. Payne (3½ h.p. Zenith) ...	2 47½ ...	8½ slow

H. Frain in the Turk's head race in the Scarborough gymkhana.

The winner's machine has somewhat of a history, for it made fastest time in the twin class at the A.C.U. open hill-climb at Birdlip as far back as 1906, when it was ridden by R. W. Ayton.

An excellent musical evening, provided by the Shrewsbury Mascots, followed the event, and was greatly appreciated. The club's best thanks are due to Mr. J. Tomlins, of Ironbridge, who very kindly acted as timekeeper for the competition.

Scarborough and District M.C.

The results of the gymkhana held on the Marine Drive, Scarborough, by special permission of the Mayor and Corporation, were very successful. The motor cycle classes included obstacle, slow, egg and spoon, and lifebelt races; speed judging, tilting at the rings, needle threading, and changing sparking plug. The first prize was value 20s., second 10s., and the third 5s.

The total number of marks gained by the first three were:

	Marks.
W. E. Grange (3½ h.p. Bradbury)	101
H. W. Fortune (3½ h.p. Bradbury)	80
Davies (3½ h.p. Bradbury)	77

The remaining ten riders finished in the following order: Clay (Triumph), H. Frain (Zenith), H. Moore (Humber), H. L. Kettle (M.R.), T. Strafford (Triumph), Ullyatt, T. Jackson (Brown), W. Brown (Zenith), Wilks (Premier), and Brooke.

Mrs. Ringrose handing the needle and thread to H. L. Kettle, in "Threading the Needle"—one of the competitions in the Scarborough gymkhana.

To-morrow, Friday, is the last day for entries for the speed trials on Whit-Monday, for the Webster trophy and six other prizes, provided there are twenty starters. Entry forms with fee (1s. 6d.) should be sent to H. Frain, Snainton, S.O., Yorks, without delay.

Streatham and District M.C.C.

Havant and back *viâ* Guildford (138 miles) was the course chosen for the annual reliability trial on May 20th last, the winner to receive the silver cup, given to the club by the president, Mr. Julian W. Orde. Messrs. Kempshall presented a pair of tyres for the second prize, and the club gold medal made the third. Bronze medals were awarded to all competitors finishing within a given time. The results were as follows in order of merit. Highest possible marks 500:

	Rider and machine.	Fig. of Merit.
1.	W. C. Oldman (5 h.p. Bat and sidecar) ...	500
2.	A. S. Bright (2½ h.p. New Hudson) ...	497
3.	W. S. Barrett (5 h.p. Bat and sidecar) ...	496
4.	J. W. Ayers (3½ h.p. Osborn)	490
5.	H. Hunter (5 h.p. T.T. Bat)	481
6.	D. R. Greig (3½ h.p. Grandex)	480

Other machines competing were **Humber, Rex, Zenith, Alcyon, Chater-Lea, Kerry-Abingdon, Triumph, V.S., Douglas, and A.C.**

Club News.—

Leeds M.C.C.

Eighty-two members and friends were present to hear Mr. F. Hulbert's illustrated lecture on the Triumph motor cycle. A keen discussion followed. Forty-one new members have joined this year.

Wansbeck M.C.

The scratch hill-climb at Middleton was won by T. W. Hall (3½ h.p. Bradbury), a field of five only competing. The paperchase on the 28th ult. proved to be very popular, the first in at the kill being J. A. Anderson (3½ h.p. T.T. Triumph).

Marlborough Athletic Club (Motor Cycle Section).

A members' hill-climb will be held early this month at a well-known rendezvous. Prospective members in the West Hampstead district should apply for further particulars to Mr. J. B. Ballantyne, 12, Gascony Avenue, West Hampstead, N.W.

Birmingham M.C.C.

The formula for the open hill-climb at Shelsley Walsh on June 10th should read:

$$\frac{\text{H.P. (on formula)} \times T^{1.5}}{W}$$

The Land's End run starts at 5 a.m. on Saturday, from Victoria Square, Birmingham, meeting at 4.30 a.m. There are ten lightweights and twenty-seven heavyweights entered for the Lycett Trophy.

Surrey M.C.C.

Copies of the rules and conditions governing the reliability competition Guildford-Exeter and back, to be held on June 13th and 14th, for the Triumph Challenge Cup and other prizes, are now obtainable from the hon. secretary, C. J. Keeny, Madeira Road, Streatham. Entries cannot be received after Wednesday, June 7th. The start being at 11 p.m., there will be about four hours of night riding, but a full moon is due that night.

Oxford M.C.C.

Last week a hill-climbing competition took place, Banbury members *v.* the rest of the club, resulting in a win for Banbury. The fastest time of the day was made by L. H. Derryweather on a 7 h.p. Indian, and R. H. Viggers on a Twin Enfield made a good climb. The following made the best performances on formula in order of merit: H. A. Ward (New Hudson), J. E. Webb (3½ h.p. Triumph), H. Askew (3½ h.p. Triumph), and G. F. Cooper (3½ h.p. Triumph).

The next event will be a 100 miles non-stop to schedule time to qualify for the M.C.C. team competition.

West Essex A.C.

Members are asked to note the dates fixed for the following competitions: Mr. P. Farrington's cup, June 11th; President's trophy, June 18th.

Brighouse and District M.C.C.

The opening run of this newly-formed club took place recently, when a small party had a pleasant day at Bolton Abbey. Local readers are cordially invited to communicate with the hon. sec., Mr. C. Drake, Rookery Place, Brighouse.

Essex M.C.

An important 200 miles non-stop reliability trial is being organised for Coronation Saturday, June 24th, open to all types of motor cycles, passenger machines, and cars, in three separate classes. Mr. Ernest Bass, of Bishops Stortford, Herts, is acting as trial honorary secretary, and particulars of the competition can be obtained from him.

Huddersfield and District A.C.C.

This club recently held a seventy-five miles non-stop competition. Those who accomplished non-stop runs were:

		Error.
1.	J. E. Worthy (Triumph)	2m. 22s.
2.	N. Senior (P. and M.)	2m. 31s.
3.	S. Brooks (Triumph)	4m. 14s.
4.	T. Canby (P. and M.)	6m. 8s.
5.	B. Harrison	10m. 38s.

Helensburgh M.C.C. hill-climb, the results of which were given last week. The meeting at Garshake, Dumbarton.

BROOKLANDS WHIT-MONDAY MEETING.

Two events are down for decision at the B.A.R.C. Brooklands Meeting next Monday, the second short race at 2.25 p.m., and the second long race at 3.15 p.m. Entries are as under:

	Bore and Stroke.
Dr. H. S. Gaskell (1 cyl. Triumph) ...	85 × 88
C. G. Pullin (2 cyl. J.A.P.) ...	85 × 86
R. J. Bell (1 cyl. Moto-Rêve) ...	62 × 85
F. W. Barnes (1 cyl. Zenith-Gradua)	76 × 65½
F. P. Johnson (2 cyl. Matchless) ...	85 × 58
G. E. Stanley (1 cyl. Singer)	85 × 88
O. C. Godfrey (2 cyl. Indian)	82½ × 93
A. J. Luce (2 cyl. Bat)	85 × 65
J. R. Haswell (1 cyl. Triumph)	85 × 88
H. D. Shaw (2 cyl. Indian)	82½ × 93
F. H. Arnott (1 cyl. Rudge)	85 × 88
S. A. M. Witham (1 cyl. Rudge) ...	85 × 88
W. Johnson (1 cyl. Buchet)	76 × 73
F. A. McNab (1 cyl. Trump-Jap) ...	90 × 78
A. Baker White (1 cyl. Trump-Jap) ...	85½ × 85
D. F. Steeves (1 cyl. Premier) ...	85 × 88
H. Shanks (1 cyl. Kingfisher)	85 × 60
P. Butler (2 cyl. Dot)	80 × 58
W. Dewar (1 cyl. Triumph)	85 × 88
G. Griffith (1 cyl. Zenith-Gradua) ...	85½ × 85

Besides the motor cycle races, there are nine events for cars, and S. F. Cody and others will probably fly.

CARBURATION AND VALVE STRETCHING.

Mr. J. A. Prestwich, the well-known maker of the J.A.P. engine, has sent for our inspection two exhaust valves. Both valves are identical in pattern, and were supplied together to Mr. F. A. McNab, of the Liphook Motor Works. One of the valves was used by Lieut. Stewart in his six hours' record ride, when he used a J.A.P. automatic carburetter on his Trump-J.A.P.; it was also used in two previous races at Brooklands, and it now shows no sign of lengthening or reduction in the diameter at the neck. The other valve we are informed was run in an engine at full speed on Brooklands for eight miles with a single jet carburetter with the result that it has stretched considerably, being reduced in the neck by $\frac{1}{32}$ of an inch. Both valves are standard, but the one used with the single jet carburetter is quite $\frac{1}{32}$in. longer than the other. This tends to uphold Mr. Prestwich's contention that an automatic carburetter produces a more homogeneous and perfect mixture, and, in consequence, the valve stem is not heated to the same extent, neither is there so much waste gas being expelled past the stem of the valve. The subject is all the more interesting, because one might be led to think that the valve which was unaffected was used on an engine which did not produce the same power, but as Lieut. Stewart's record was accomplished with its aid, it is certain that an automatic carburetter is at least as powerful as an ordinary one, and apparently the burning effect on the valve stem is non-existent.

New West End Garage.

Maude's Motor Mart will shortly open large garage in the West End.

Insurance.

Percy Butler and Co., 3, Peter's Square, Manchester, are issuing a special insurance policy for competitors in the T.T. Races. Further particulars may be obtained on application to the above address.

Colonial Requirements.

The makers of the P. and M. motor cycles, Messrs. Phelon and Moore, Ltd., 12, Mortimer Street, W., have sent us a photograph of one of their colonial models, which shows a crank case clearance of 9in. The lowest portion of the machine is the silencer, but this clears the ground by 5½in. This firm was one of the first to recognise the special requirements of motor cyclists in some of our colonies, and is now reaping its reward in an increased demand.

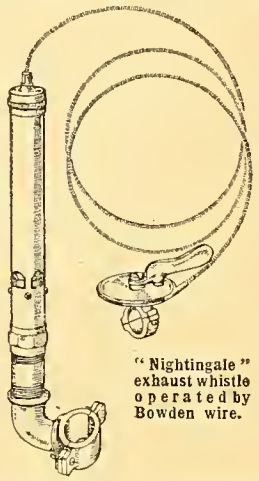
A New Lubricating Oil.

We have lately sampled a tin of special Lydcyl motor cycle engine oil prepared by the Transatlantic Oil Co., Ltd. Lydcyl oil is blended from a special selection of "fixed" oils, together with the best hydrocarbon oils. The compound is worked up on the idea of freedom from carbonisation, non-gumming of the piston after standing, and sweetness in action. Our test has proved altogether satisfactory, the Triumph engine in which we tried it always seeming to be free when cold, and knocking was non-existent.

Garlets

New Pattern Exhaust Whistle.

The annexed sketch of an exhaust whistle operated by Bowden lever on the handle-bar is the production of Messrs.



"Nightingale" exhaust whistle operated by Bowden wire.

H. Taylor and Co., 21a, Store Street, Tottenham Court Road, W.C. To operate the whistle effectively the lever should be quickly opened and closed. This produces a nightingale note.

A Record Ride.

When V. J. Surridge broke the one hour single-cylinder record last Thursday on a 3½ h.p. Rudge, he used Dunlop tyres, B. and B. carburetter, C.A.V. magneto, Lyso belt, Simms plug, and Price's Huile de Luxe.

A.C. and Alycon Depot.

At his new premises, 31, Vauxhall Bridge Road, Mr. G. N. Higgs has set aside a dressing room, in which those of his clients who arrive in a travel-stained condition after a drive from the country can smarten themselves up before going into town.

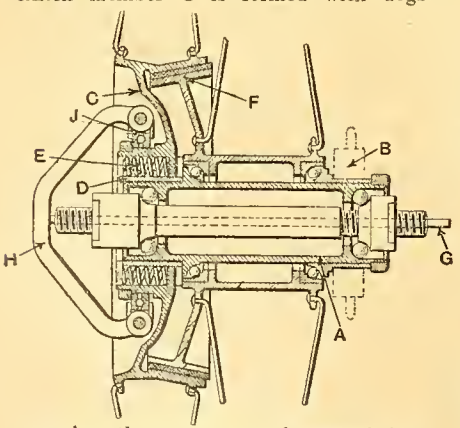
A New Tyre.

The Goodrich Tyre Company, Limited, 117-123, Golden Lane, E.C., have lately introduced a new pattern rubber studded tyre. In the case of this cover there are fewer studs than in the old type, so that the space between these is greater with the result that the tyre does not clog up with mud. Another important feature is the insertion of a soft layer of rubber between the tread and the canvas, which serves to make the tyre exceptionally resilient. This is the first time that this practice has been introduced in the construction of an ordinary motor cycle cover. The finest quality of canvas is employed and only one pattern is at present on the market, made in two sizes, 2¼in. for ordinary use, and 2½in. for sidecar work.

Patents by Eric W. Walford A.C.I.P.A.

The Centaur Hub Clutch.

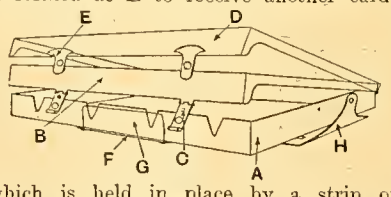
This invention provides a simple and efficient construction enabling a cone clutch of the requisite dimensions to be combined with the hub. Mounted on ball bearings on the fixed spindle is a sleeve A, which carries at one end the pedalling sprocket B and at the other the driving clutch member C. On the sleeve is fixed a ring D having pockets for the reception of springs E, and the clutch member C is formed with dogs



engaging the recesses, and pressed into engagement by the springs E. The hub shell is mounted on the sleeve A, and is formed integral with the driven clutch cone F. The clutch is disengaged by a push rod G acting through a bridle H, a bearing J being interposed to take the end thrust.—G. Gilbert and W. G. Jenks, No. 11,414, 1910.

A Map and Route Card Holder.

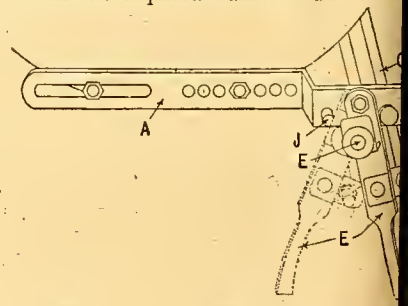
This device comprises a box A having a lid B provided with spring fasteners C. Above this is a second lid D of transparent material and provided with fasteners E. A map or route card placed between the lids B and D is thus readily visible. The bottom of the box is formed at E to receive another card,



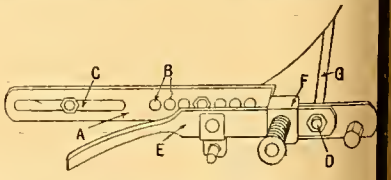
which is held in place by a strip of transparent material G. Slotted plates H are provided to form an adjustable holder, and these are pivoted at the ends to allow the box to be turned over as required.—F. Waigh, No. 17,820, 1910.

A Double-purpose Stand.

This stand is secured to the engine crank case and adapted to permit of either wheel being raised from the ground at will. It comprises a pair of plates A, one on either side, having holes B and a slot C to enable them to be secured by the crank case bolts and adjusted to obtain the required balance. Pivoted



D to each plate is a leg E, provided with a spring latch F, and connected together by a rod G. When it is desired to raise the rear wheel from the ground, the latch F is released and the legs swung into position against a stop. To raise the front wheel the legs are swung into the position shown in dotted lines, a



movable stop J being inserted to prevent the legs returning to the out-of-action position, which they normally do under the action of a spring (not shown).—S. F. McKenzie, No. 11,748, 1910.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Racing Machines and Change-speed Gears.

JUDGING by the number of manufacturers who are experimenting with variable gears for the Tourist Trophy Races, there is likely to be quite a crop of novelties in this direction, many of which will not be submitted to public inspection until a few days before the dates of the actual events, and so rendering the T.T. more interesting to the average tourist than in previous years. From information we have received the whole of the various types of variable gear are likely to be employed. These comprise compound and epicyclic gears in back hub and on engine-shaft, counter-shaft gears, and direct gears by means of expanding engine pulleys with or without the rear wheel moving in unison to maintain the correct tension of the belt.

The gears and gear ratios employed for the junior machines will probably represent more closely the average reduction required for touring conditions, because lightweight machines are never employed for passenger work, and their gear ratios will be little, if any, higher than standard on account of the severity of the ascent of Snaefell.

On the other hand, the variably geared senior machines will be geared just low enough to enable the mountain climb to be negotiated at the fastest speed at which the engine is capable. This means ratios of 5 to 1 and 3 or 3½ to 1.

As is well known, the object of the race is to assist the development of the ideal touring motor cycle for the rider, but it is advisable not to lose sight of the fact that the type of machine which will participate in the race is extremely popular for passenger work, so that a word or two on the suitability of the gears which are likely to be used for this phase of the pastime may be acceptable at this juncture.

Now for touring purposes with a sidecar a low gear of nine to one would usually be sufficient reduction, provided the transmission was direct from engine to rear wheel, but if it passed through a train of gear wheels in hub or on engine-shaft it would be usually found too high.

One reason for this non-adaptability is that some power is always absorbed by a train of gear wheels, and it is found in practice that a weight which can be propelled uphill with a given direct gear ratio will not ascend the same gradient with the same gear ratio and an indirect form of transmission.

Therefore it will be no evidence of suitability for passenger work if a machine fitted with a variable gear should win or finish well up the list in the above race, particularly when it is only possible to obtain a very limited range of gears.

What we particularly wish to emphasise is that many of the gears which will be employed are being specially made for the race, and although our manufacturers will learn a great deal from them to our ultimate benefit it does not necessarily follow that they can be adopted as standard for solo and passenger work without considerable modification.

Finally, it is worthy of mention that this comparatively sudden attention to variable gears has been necessitated by the adoption of the Snaefell course. Our readers will recollect that this journal strongly urged the adoption of the "Four Inch" course last November, in face of opposition, as we could foresee at the time that this state of affairs would automatically be the result. It is the best fillip the change-speed gear has received up to the present.

The First International Competition of the Year.

THE enterprising North-West London M.C.C., which is the first to organise an attempt to revive international competition, is, as we have before mentioned in these pages, organising an event with the Motor Cycle Club de Lyon. The arrangements for tour and competition are now practically completed, and intending participants should ask for particulars from Mr. H. J. Pooley, 23, Clifton Avenue, Finchley, N. Those private owners who would like to take part and are not members of the N.W.L.M.C.C. should apply for membership.

In a preliminary notice which has been circulated among members, it is stated that the committee sincerely trust that each member, both for his own sake and for the sake of the club, will endeavour to take part, for the event, being the first motor cycle international club meeting, will be closely watched on every side. It rests consequently with the North-West London M.C.C. efficiently to uphold the honour of British machines, riders, and club men.

It is stated that the touring and competition sides of the event will be kept entirely distinct. There will be no entrance fee for the tour, but every participant must, of course, provide for his own personal expenses. If any fees are decided on in connection with the competition at Lyon they will be moderate. What the club wants is a team of competitors and as many tourists as care to join the party.

All types of machines are admitted. The course is very difficult, as it comprises many steep ascents, descents, and dangerous turnings.

The M.C. de Lyon is inviting the N.W.L.M.C.C. to participate in the Circuit du Rhône and compete for a challenge cup. Other competitions will be organised in the district, such as hill-climbs, speed tests on the level, and reliability trials. To revert to the route, there will be three laps of 60 kilometres each, making a total of 180 kilometres.

The tour will, if necessary, be divided up in the following way:

(*a.*) An advance party will start on Saturday, July 29th, at 3.30 p.m. from Dollis Hill, and will ride to Newhaven, embarking by the night boat for Dieppe. A route of special interest will be followed, enabling Lyon to be reached at the time the "B" party arrives.

(*b.*) The second section, and probably the main body, will leave Marble Arch at 6 a.m. on Thursday August 3rd, and will breakfast at Lewes, ride on to Newhaven in time to ship machines at 10 a.m. for departure at 11. Arriving at Dieppe, all the necessary formalities will be superintended by the R.A.C. and A.C.U. representative there, and the party will ride to Louviers, arriving about 6 p.m., accommodation being arranged for at the Hotel du Mouton d'Argent. The following day—Friday, August 4th—the main road journey will be dealt with, the routes passing through Chartres, Orleans, Gien, Cosne, to Nevers, where the night will be passed at the Hotel d'Angleterre.

On Saturday, August 5th, the journey to Lyon will be completed in the morning, leaving the rest of the day for overhauling the machines in preparation for the Circuit du Rhône the next day. Monday will be devoted to the hill-climb and minor competitions, and on both Sunday and Monday tours will be organised by the Lyon Club for those who do not wish to compete in any of the events.

(*c*) A few members may, of necessity, be obliged to travel the entire route by train and boat, and special arrangements will be made in regard to securing through tickets for man and machine.

The president of the M.C. de Lyon has expressed his opinion that it will be advisable for intending competitors to make a tour of the course previous to the race, and he has generously offered to send several of his own members with the Englishmen round the route previous to the competition. In the recent annual speed trial of the M.C. de Lyon the winner made an average of 49½ miles an hour.

The return journey will commence on Tuesday afternoon, following a similar route, and here again the wishes of members will be considered in regard to making a speedy or leisurely return.

The following constitute the N.W.L. team:

E. Cherry (3½ Triumph)
G. Rowden (3½ Triumph)
L. F. Scholte (3½ Premier)
G. B. Owen (3½ Zenith)
H. J. Pooley (3½ Premier)
F. Fox (7 Rex)
F. A. Rose (3½ Triumph)
C. M. Simpson (7 Indian)
C. M. Down (5 Indian)
H. H. Berlandina (5 Indian)
Hal Hill (5 Bat)
F. Thomas (——)
C. Williams (8 Chater-Ja and sidecar)
G. H. Hollis (2¾ Douglas)

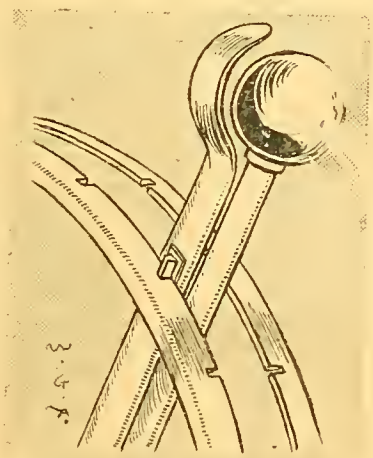
IN BROOKMAN'S PARK. Competitors' and spectators' machines grouped in the park during the Herts County A.C. speed trials.

THE MATCHLESS T.T. MACHINE.

A Variable Gear adopted, giving ratios from 3 to 5 to 1.

TRUE to their reputation of being early birds—the numerous worms they have caught is a strong proof of the value of such a practice—Messrs. Collier and Sons have already got their T.T. machines, or at any rate ne of them, on the road, and we have had an opportunity inspecting them. As will be seen from the photographs, ere is nothing *outré* out them, and in neral appearance they e almost exactly similar the machines which re so victorious in last r's race.

They differ from the ter in two notable rticulars, namely, the pensions of the engine l the provision of an enious variable gear. th regard to the gine, this is a J.A.P. 76 mm. bore and mm. stroke, and has rhead valves, all of ich are mechanically rated, a noticeable ture being the enor- us strength of the ve springs. The tor is rated at 4 h.p., ich seems a somewhat servative figure, if speed of sixty-eight es an hour, which C. R. Collier's machine has done on road, can be taken as a criterion.



Arrangement of the two levers of the variable gear.

A New Departure.

The variable pulley gear is quite a new departure, and a number of most individual points. The back wheel is ng in forks, which are supported from the main chain rs by means of links, and is capable of being moved kwards and forwards through the agency of a double- ow crank pivoted in the bracket which would otherwise used for the pedalling gear.

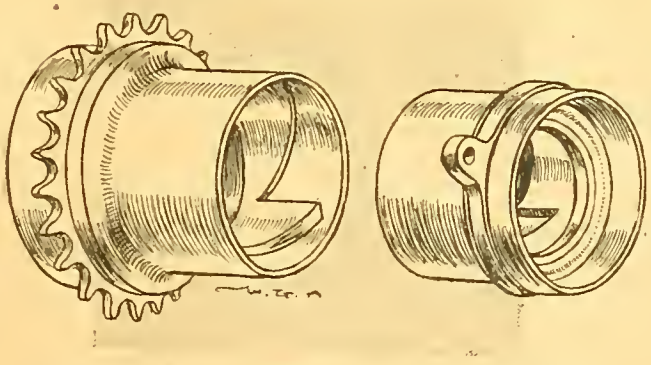
These cranks are connected to a long knob-ended lever ch works in a notched quadrant on the right-hand side he tank that stretches almost down to the steering head. de the aforementioned double-throw crank is an internal ft, which is connected to a second lever working by the of the first in the other half of the same quadrant. The other end of the internal shaft, by means of a short length of cycle chain, operates the expanding pulley on the engine-shaft. The levers are so arranged that they can be both operated together.

While one has a knob the other has a curved handle, which fits over the knob of the first, so that when firmly clasped and brought together the pawls of both levers are withdrawn from the notches on the quadrant, the "spring" in the levers being for this purpose made exactly equal. The quadrant has six notches, and the range of gears varies from 3 to 1 to 5 to 1.

Detailed Description of Expanding Pulley.

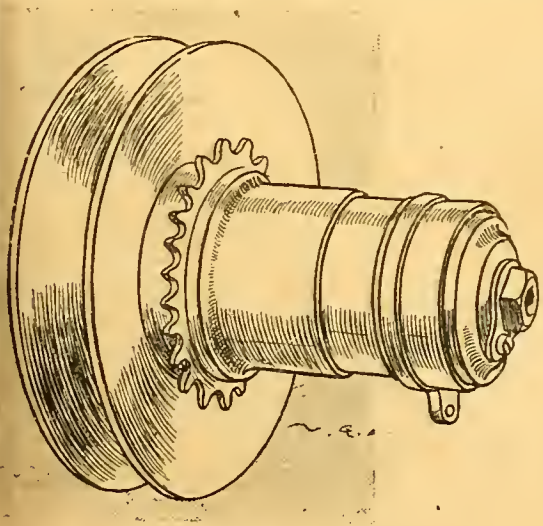
The expanding pulley is worked by the second lever, and the outer pulley flange is carried by three keyways sliding over three keys attached to the arbor of the inner flange, the two being forced apart or drawn together by a quick thread drum, the moving piece of which is formed with a chain sprocket wheel, and operated in the manner already described. The dead end of the quick thread motion is anchored to the frame by means of a link and ball bearings. Ball-bearing thrust blocks are used to take up the strain when the outer flange of the pulley is being operated.

It should be noted that on account of using a chain to transmit the angular motion of the lever, movement of the back wheel is exactly and always proportional to the expansion of the pulley, which would, of course, not be the case if a directly connected crank motion were exercised. Thus the belt is kept accurately at the same tension whatever the gear ratio employed.



The two parts of the quick-thread drum on the engine pulley.

A good point about the use of two levers for the operation of the gear is that by the use of one of them the belt can be tightened or slackened independently of the alteration of the gear ratio, and this is likely to prove valuable in taking corners, as it entirely avoids any "conking" of the engine when it is called upon to pick up after the corner has been negotiated. We understand that Messrs. Collier are not making this gear for any machines except those of the T.T. type. This, at any rate, is their present intention. The arrangement of the quick thread drum is particularly neat, and should stand any amount of hard work without showing signs of wear. In the illustration the right hand piece slides inside the rotatable left hand piece.



The Matchless expanding and contracting engine pulley.

Other Points of Interest.

Other features of the machine are a very well designed guard or under-shield which entirely prevents mud being thrown on to the belt, and should also do much to keep the engine perfectly clean. Contrary to last year, this year's T.T. Matchless machines have a square section tank, which holds two gallons of petrol and a large supply of oil, which is fed to the engine by a J.A.P. lubricator.

The magneto is well protected by a large aluminium shield, which, while absolutely preventing dirt or wet getting to the terminals, nevertheless affords very easy accessibility to the contact breaker. The machine complete ready for the road weighs about 200 lbs. (See pages 562 and 582.)

Ladies and the Motor Cycle.

MANY years ago, when it was suggested that ladies should ride bicycles, Mrs. Grundy and the British matron held up their hands and cried in concert, "Well, I never. What next!" But their shrill protests were drowned in the general shout of approval which greeted the idea, and they had perforce to accept the inevitable. Mrs. Grundy retired to nurse her outraged feelings, and the British matron helped her daughters choose becoming cycling costumes. Now the idea of motor cycling for ladies is daily gaining ground among all classes. Once more the voice of Mrs. Grundy is heard in the land, crying out in disapproval and resenting the attempt to weaken her hold on the people's mind. But this time even less notice is taken of her than before; indeed, the old lady is well on the way to being numbered among the large band of "futile personages" whose ravings only earn the smiles and complacent disregard of the new generation. The British matron, too, has deserted her. This excellent lady is wiser than her erstwhile ally; she has changed with the times; what she used, in the days of her alliance with Mrs. Grundy, to consider as being wholly impossible and worthy of condemnation she now regards as good where youth is concerned. This time there is no condescending surrender to her daughter's importunings, for she has never opposed them, and when she sees a young member of her sex spinning gaily by with rosy cheeks and flying hair, she no longer darts her freezing look, but greets her with a kindly smile and "a pleasant ride, my dear."

Anything but a Freak.

There is no doubt that the lady motor cyclist has arrived, nor has she advanced timidly into the limelight. She is a fact, and nothing less. Let us take a look at her as she stands by her mount. She is clad in a businesslike, dark-coloured divided skirt, with a jacket to match or a woollen "golfer," and her hat is sensibly compact, plain, small, and smart. All about her is a practical air of efficiency which at once gives the impression that she is complete mistress of the machine she rides. And this is true enough. She can wrestle with a stiff outer cover, argue with a refractory carburetter, or minister to a slipping belt, with the best of that sex to which she has until now been obliged to look for assistance when the wielding of a spanner has been necessary.

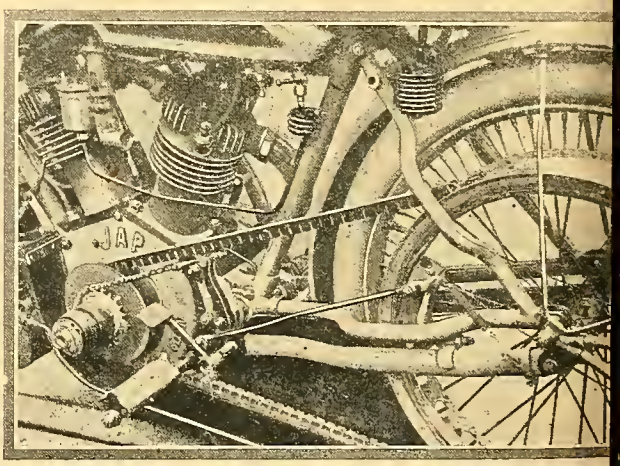
The most convincing proof of the growing popularity of the motor cycle among ladies is the fact that manufacturers have begun to build special ladies' models, which the fair riders can start without any preliminary run, can lift and carry about themselves, and which, if anything goes wrong, they can take home with but little more trouble than a push-bicycle. There must be a good many ladies clamouring for motor cycles if the manufacturers will go out of the way to compete with each other to make a mod most suitable for a lady's use.

What the Ladies Think.

Now as to the idea from the ladies' point of vie Well, unquestionably they are very keen. T modern young lady does not like to think that the is anything a man can do which she is not a capable of performing, at least so far as sports a concerned, and so she has tried her skill with t motor cycle to find that she can get along very we With a special lady's mount she can ride as far a as fast as her gentlemen friends, and if anything go wrong she has proved her capability to deal with t emergency. Many, too, are not content with "men ladies' lightweights, but demand "men's" machin One well-known lady motor cyclist has a machine 5 h.p. with which she is as much at home as with sewing machine.

The fitness of the motor cycle as a pleasing medi of sport and amusement for ladies is therefore e dent, and of the success of ladies as motor cycli there is no doubt. The pastime offers so many attr tions that it could not long remain unsupported. longer will hubby be able to go off with the exc that "ladies are not wanted on golf courses." partner can reply that they are wanted in mo cycling clubs, which are making special sections them, and hubby must buy a motor cycle for him and one for his wife. Then what a limitless field enjoyment is thrown open to him! He may learn fascination and romance of the open road, he w see new things and new places, and he will beco better acquainted with the beauties of his own co try. He will be enjoying all these things, and he w have his wife with him to share them, which is as should be.

FRANK N. HILLIER



Showing the new Matchless variable gear and double horizontal rear stays. Observe the large metal guard. (See previous page).

OCCASIONAL COMMENTS.

By "IXION."

The Medical Aspects of Six Days' Records.

I have been talking to several medical men about the physical effects of excessive long distance riding, such as is represented by a modern six days' distance record, and the general verdict is such that no manufacturer ought to permit, still less order, an employé to attack this record, and that no amateur ought to attempt such a ride until he has undergone a very searching examination at the hands of a reliable physician.

Without entering into technicalities, the general effect of the prolonged strain is to dilate the heart; the consequences may not be perceptible to the hardy rider for a time, and, indeed, an exceptionally strong man may never be conscious of any ill effects. But it is common knowledge that many famous athletes have gone out like candles within a few years of their exhausting feats.

The history of the University boat race is full of instances; magnificent specimens of muscular humanity, after rowing in several punishing races, have within a few years collapsed under what seemed to be a mild attack of influenza or other common complaint. To quote a popular advertisement, such feats are simply "an overdraft upon the bank of life."

B. H. Davies, who first set up a six days' record some six years ago, tells us he felt the effects of it for several years; he only covered 1,200 odd miles—half A. E. Catt's distance—but as his machine was slow and feeble compared to those of to-day, he spent about the same time on the road, and was further exhausted by hours of "l.p.a." on hills. Both he and Mr. Catt undertook their rides against the advice of the Triumph Cycle Co. In like manner Mr. Catt finished in a very exhausted condition. His face was skinned, his eyes inflamed, his back sore, his wrists and feet swollen; he could not sleep at all the night he finished, he dare not trust himself to face the traffic in Norwich, he lost all sense of perspective so that he felt he was riding into a flat oil painting instead of into a solid landscape, and his heart was unsettled for some time afterwards.

On the other hand, one man in a million can sustain such strains without serious injury—I need only mention such names as G. P. Mills and G. A. Olley. But I hope enough has been said to deter any manufacturing firm from sending an employé out to beat this record, and to warn any light-hearted amateur against entering upon a task which may strike twenty years off his life span.

Trouser Shields.

It is remarkable how many modern machines retain the power to singe a hole through a costly pair of breeches or overall leggings in those convulsive knee-holds which the most courageous rider seeks when he skates round a hairpin corner in a hill-climb, or evades a frolicsome horse by the breadth of a whisker.

We put up with such annoyances in ancient days. Do I not remember how my old Ormonde used to despatch 2,000 volts up my thigh marrow from its sparking plug, and laid the foundation of Dunhill's and Gamage's businesses by burning out one pair of mackintosh breeks per each wet day? Neither have I forgotten how I begged a large framed sheet of wire chicken netting from Albert Wright's Irish racer, which ended my sufferings and expenses.

But to-day the old nuisance continues, and it is left to the accessory maker to supply us with trouser guards.

The other day I reviewed a brigade of famous riders at the start of a crack climb, and scarcely a man of them but was grievously marred as to thigh or calf apparel, while the riders of a certain make were spectacles indeed! Each man had his right ankle sopped in green oil, his right calf marked with a large ragged and charred hole, and both thighs stained with brilliant tank enamel.

Is there a conspiracy, deep and dark, between the manufacturers of our machines and the purveyors of the baggy fawn legwear we mostly affect, or is it merely true that evil is wrought by want of thought as well as by want of heart? I hereby give warning that unless there is an improvement before next Olympia I intend to found the Motor Cyclists' Leg Protection Association, in which I might blushingly accept the proud position of perpetual president.

Transparent Lacquers.

From an "appearance" point of view, we may divide motor cyclists into three classes—(1) riders who never clean their machines, (2) riders who clean their machines after each ride, (3) riders who coat the bright parts with grease and clean up at intervals. None of these classes are really happy.

The man with the dirty machine feels ashamed when he is in clean company; the man who uses rag, Selvyt, and metal polish four days a week grows mightily sick of the labour; while the grease merchant wishes he did not get into quite such a filthy mess whenever he is compelled to do some little job like detaching a cover.

Here there is an obvious opening for a transparent lacquer which can preserve the plated parts from rust and enable cleaning to be done by the judicious use of a small pressure hose. I recently inspected a workmanlike car all the bright parts of which had been treated by a transparent invisible lacquer known as "Antarnish." (See Gamage's list.) Only upon very close examination could the difference between the lacquer and plain polished plating be detected. The lacquer can at any time be removed by rubbing the parts with methylated spirit. Cleaning can be done by hosing down without the least fear of rust, provided the entire surface has been covered with lacquer. I think this is just what so many riders are looking for. At any rate, I purpose treating a new machine to be delivered this week in this manner, and towards the end of the year I will report upon the result of my experiences.

It is too much to hope that makers will list lacquered plating as an option, but the process of application is quite simple, and may be performed by anybody at home. Some riders have expressed a wonder that no firm brings out an "all black" machine, having the usual plated parts filmed over with black celluloid under the Dover patents; but the patentee informs us that the factory process is not at present commercially applicable to all metal parts, irrespective of shape.

A SHORT TRIP IN THE TRANSVAAL.

WE were getting tired of twenty-five-mile spins along the Reef and back again by the same route, and so when a friend, E——, said one morning, "Let's try and get to Rustenburg," my brother and myself at once became keen on the idea.

In the absence here of the delightfully compact and accurate route maps one is accustomed to at home, we set about getting as much information as possible about the roads, stopping places, etc., from garage proprietors, colonial friends, and others who might be supposed to know the country. The estimates of the distance from Johannesburg to Rustenburg differed considerably. Someone told me it was about sixty miles, E—— felt sure it was not less than a hundred, while one man informed my brother that it was a hundred and fifty miles!

Perhaps I should here state that if any reader cares to look at a map of the Transvaal he will see the small town of Rustenburg lying north-west from Johannesburg and due west from Pretoria. Our scheme was to start about two o'clock on a Saturday, reach our destination that evening, and the next day journey back *via* Pretoria.

Careful Preparations.

The main Reef road runs as far as Krugersdorp, but after that we should be riding through country quite unknown to us and on tracks rather than roads. It was also necessary to take into consideration the fact that, instead of passing every few miles through villages and towns where repairs and supplies would be handy, we should be travelling for the greater part of our journey through country dotted by scattered farms ten to twelve miles apart with one or two Jews' stores here and there along the road. Consequently, in addition to the usual tools, spare valves, tubes, and belts, we also loaded up our machines with rugs, mackintoshes, and enough food to enable us to camp out if darkness should overtake us on the road.

My brother and myself rode 1909 Triumphs, and E—— had a 1910 model of the same make.

Jumping on our laden machines soon after two o'clock one Saturday, we set off along the main Reef road past mines with their head gears and immense "dumps" and crowds of promenading Kaffirs. Krugersdorp (twenty miles) was reached in the hour, and, my brother having filled up his tank, we left the little town and ran into the unknown country with a pleasurable sense of adventure.

Nothing worth noting happened for the first twenty miles, except that we encountered several ox-waggons creaking along at about 3 m.p.h. The Dutchmen driving these conveyances seemed to have a grudge against any vehicle moving faster than themselves, and with great ingenuity they would always contrive to block the entire road just as one overtook them. We also met a motor cyclist acquaintance who did his best to encourage us by drawing a lurid picture of the road ahead. According to him we should have to ride over terrific water courses and boulders, and we should be lucky if we got through without buckled wheels and burst tyres.

However, we mentally accepted his statements *cum grano salis*. When about forty miles from the start we encountered our first obstacle—a drift. As is usual out here, there was no bridge, but only a line of insecure stepping stones across which we walked, pushing our machines through a foot of water alongside. During our ride we crossed a number of these fords or "drifts" as they are called.

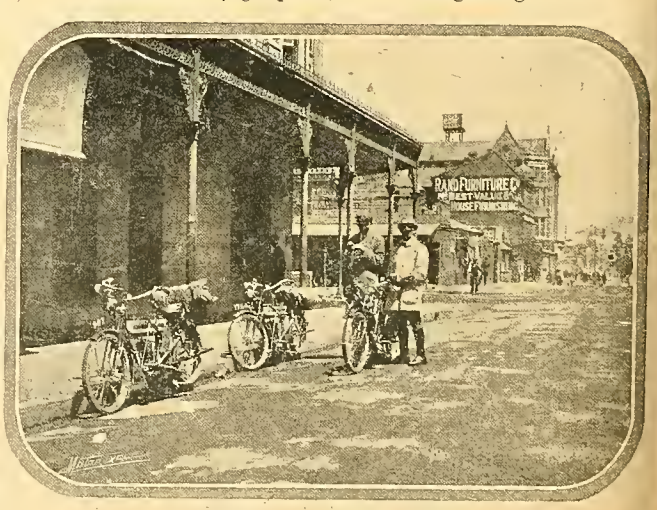
To add to the difficulties of the road there is invariably a steep, if short, piece of hill on either side of these drifts. Usually we could start our machines and run by the side to the top, but one or two were so steep that we were obliged to put in some heavy work pushing them up to the level ground.

Through the Magaliesberg Mountains.

At this stage the country, which had hitherto been open and gently undulating, began to get more hilly. Our route had lain almost due north for several miles, but the road now took a turn westward again and ran along near the foot of the Magaliesberg Mountains. I called it a road from old habit, but really sometimes it was so undecided as to be more like a footpath. At one point it ran over a rise and became a succession of small round boulders through which we tried to pick a track with as few bumps as possible.

For about twenty-five miles we followed the Magaliesberg, the road all the while descending in long, gentle slopes through country covered with "bush" or small thorn trees ten to twelve feet high.

At last as the sun was setting we turned north again, and a fine macadamised road led us, twisting and turning, through an opening in the mountains and all the remaining ten miles to Rustenburg, which we reached at 7.30 p.m., as it was getting dark. We



En route for Rustenburg The laden machines.

A Short Trip in the Transvaal.—

ut up at the local hotel which stood in the main treet opposite the "Law Courts."

Incidentally, my cyclometer had settled the burning question of the distance from Johannesburg by

A typical "drift" to be crossed on stepping stones.

ecording 77½ miles, and we had come through so r without any engine or tyre troubles. The road, o, had been what is considered very fair here, though it would be bad for a tenth rate moorland ack at home.

Ignorance is Bliss.

It was a lucky thing that we could not see into the ture for even one day, as if we had had that gift e might not have been quite so jovial over dinner.

The next morning our machines were glanced over, r luggage strapped on the carriers, and, after breakst, we filled up at the shop of the local cycle dealer, no had to be fetched down from his "country seat" lf a mile away. About ten o'clock we pushed off r Pretoria, and within six miles my brother's front re burst. Thereupon we put our heads and our toolgs together, and while my brother A.L. got out a are butt-ender and a big canvas patch, E—— proced his tyre levers and I brought out a leather gaiter be laced over the burst as a precaution. Thanks the Triumph accessibility, we had the front wheel t in no time, and succeeded in making a repair ich gave no further trouble.

Proceeding on our way, the road continued good some miles, except that several small streams had be crossed. Most of these were but a few inches ep, and we charged them successfully. One gave a surprise, however. Riding ahead, when I sighted water, I charged it gaily, but it proved to be someat deeper than I expected, about 18in. in fact, and nd the machine were swamped by a stream of water ot up by the front mud flap.

After about sixteen miles of this we struck an exmely bad section of road, which consisted mainly stretches of sand. Our procedure was as follows: ipping the handle-bars, and trailing our feet on the ound to act as fenders, we would rush the patch of sand at full speed, and if it were not long we would win through on to solid ground again. Usually, however, we would plug away for a certain distance with each wheel sliding in a different direction until at last the poor old engine would pathetically knock itself to a standstill. We would have to dismount and put in a spell of hard labour shoving the machine till we could make a restart. It was agreed that no ordinary machine would be equal to such surface conditions, and we wished we were mounted on 10 h.p. ice-cooled, gear-driven, six-speeders, with cold drinks in a special Thermos tank on the handle-bars.

We stopped once at a drift, and my brother and I applied the principle of water-cooling to ourselves by having a bathe in the stream. E—— very indelicately "snapped" us standing on the public highway in a partially dressed condition. After this diversion we literally pushed on for several miles, every now and again vowing with terrible anathemas never to travel over that bit of ground again on any consideration whatsoever.

At length we reached a hotel of a sort at a spot thirty-one miles from Rustenburg; the time was 2.30 p.m., and we had been on the road for four and a half hours. And this raises the great question as to whether we came under the heading of "sportsmen" or "potterers." On the one hand, it was certainly rather sporting to start out on an unknown road as we did, while on the other it cannot be denied that our average speed of 6.88 m.p.h. savours somewhat of pottering.

We roused the owner of the hotel from his afternoon siesta, and, like a ministering angel in shirt sleeves and slippers, he got us something to drink and gave us some cheering information.

After seven or eight miles, he said, we should cross the Magaliesberg again at a place called Commando Nek, after which the road was good to Pretoria.

From that point the road really did begin to improve, and by the time we reached the Nek it was as good as one marked "fourth class" on an English map. When we had climbed the not very steep hill over the Nek and were merrily coasting down the other side we thought all our obstacles were overcome. But at the bottom of the hill we descended suddenly into a little dip and found ourselves faced with quite a decent-sized stream about twenty yards across, known as the Crocodile River.

A halt for replenishments.

A Short Trip in the Transvaal.—

I started across first, walking on some stepping stones, but the bottom was so stony that progress with the machines was impossible, so finally we were forced to wade through water up to our knees and shove the bicycles along with the engines almost submerged. When the other side was reached water was running from most parts of the machines as well as ourselves. We took the plugs from the bottom of the crank cases and let out several pints of water which had found its way in through the centre of the shaft.

As might have been expected, the long-suffering engines of A.L. and myself refused to fire after this ordeal, and we had to dissect our carburetters to get out the water.

From Pretoria to Johannesburg.

The remainder of the distance to Pretoria was uneventful and the road was not too bad. Having stopped there for an hour to refresh ourselves and our faithful steeds with tea and petrol respectively, we left at 6.30 p.m. for Johannesburg, thirty-four miles away. The road is well kept, so that this last section of the run was accomplished without incident.

The distance home *viâ* Pretoria was 102 miles, the mileage for the round trip thus totalling 179½.

In conclusion, our opinion of the Triumph motor cycle is higher than ever. The spring fork might b improved, and the rims should be made much stronge for colonial roads, for we had several large dents i each wheel of our machines. Apart from these tw points the engines and cycle work stood the strain o the rough roads in splendid style. PRETORIAN.

A welcome refresher.

COLONIAL REQUIREMENTS.

FROM time to time remarks appear in the columns of *The Motor Cycle* as to the need for "all-weather" and "colonial" models. Most of the best makes are well represented out here in Natal, but I have yet to see a motor cycle which approaches the standard desirable for this country.

Bad Roads.

It would not be an exaggeration to say that there are no roads, for they are often but ox-waggon tracks, with atrocious ruts and great boulders, resembling the bed of a mountain stream. In the dry season it is often necessary to ride (or push) through fine dust or sand up to the crank case for miles, and in wet weather through a similar depth of mud.

Speed, therefore, is out of the question, and not required, but one must have a big reserve of power at low speeds and a two-speed gear for the dust. Six inches clearance under all should be the minimum for these roads.

In farming districts numerous gates across the road are encountered, and probably a deep "sluit" or watercourse (for irrigation) every 200 yards or so. This may be only a dry sandy ditch, but there may be a foot of water in it which necessitates dismounting and pushing up through the sand on the far side until your belt is dry, and a free engine becomes a *sine quâ non*. The chain or shaft-driven mount scores here; but if a belt is used, an under-geared pulley and small belt rim should be fitted.

Not infrequently one has to ford considerable rivers in which crank case and magneto are submerged even in the dry season. A waterproof magneto case is therefore most desirable, for rivers which are not too deep for an ox-waggon to cross by a "drift" or ford are seldom bridged. Gradients are not usually more severe than in England, but hill may mean ten miles of steady climbing, risi 2,000 feet or more. The road will be narrow, wi constant sharp bends and a surface which is a nigh mare. Here again high power at low speeds, mo efficient cooling, and handle-bar control are needed

One has to be prepared for extremes of hot su rain, and cold—also for sand-storms. It follo that every metal surface ought to be coslettis and enamelled. Plated parts are an absurdity and nuisance. The carburetter ought to be efficiently p tected against sand and wet.

Tyres and Frame.

No rubber tyre could be expected to stand Sou African roads and climate for very long, but I ha seen a Peter Union leather-treaded steel-studd 75 mm. tyre which has had more than three yea of hard wear. For machines which must traverse t tramlined roads surrounding towns the heavi possible 2½in. rubber non-skids are necessa Frame must be strong and low and yet have a l ground clearance. Springs fore and aft—and ve strong springs at that—are an indispensable necessi If rear springing cannot be had. then fit a stro spring seat pillar. Spokes and rims must much stronger than in British models. All mak out here are far too weak in these items. Tan should hold not less than two gallons of petrol a three pints of oil. Large gauze-lined filler caps a necessity. There must be adequate facilities carrying a large amount of luggage, tools, spares all kinds, extra petrol, etc., for in touring one m have to camp by the roadside, and there are no mo cycle depots (outside our dozen large towns) in whole of South Africa.—BY A CAPE PARSON.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Test Road for Motor Cycles.

[5649.]—I recently saw in *The Motor Cycle* an inquiry for a test road for motor cycles. Have any clubs tried Bewdley to Ludlow, *via* Cleobury Mortimer and Titterstone Clee, and back? or Tenbury to Worcester *via* Upper Tapley? I found a hill there my Douglas would not climb, though it generally carries me anywhere. The road has recently been remetalled—the loose flints were half an inch deep. The short bend in the road prevents getting up speed, and the gradient is awful. I got near the top, stuck, and looked at the remainder, and went back. I should like to know what other cyclists do in a similar fix?

THOS. ABLE.

Lightweights in Hill-climbs.

[5650.]—"Ixion" has again struck the nail on the head, as he so often does. Having attended several of the open hill-climbs this year I can bear witness to the truth of his remarks from actual experience.

I have heard an elderly sportsman who was sitting by the roadside just by the steep pitch on Kops Hill say to a friend, "Never for me, my boy," on seeing an exhausted rider nearly fall off a miniature lightweight machine after giving it "h.p.a." most of the way up the hill.

Surely the extra 40 lbs. in weight between 90 lbs. and 130 lbs. is well worth it, if it enables one to have an engine of adequate power and three-speed gear and clutch which enable one to tackle the worst freak hills in the country.

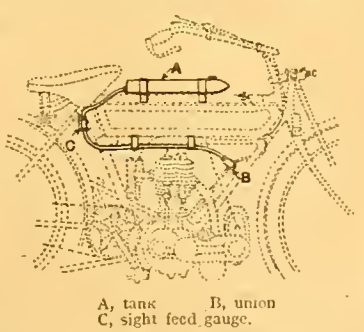
None of our New Hudson machines have ever been pedalled in a hill-climb yet, and we think it is very unfair that the expert pedal-pusher who can pedal an ordinary cycle up the hill should score on formula by means of a 10 to 1 gear and an enormous pedalling gear of 100 or more, by means of which he just crawls over the top, and wins on formula sometimes.

The same question cropped up in the 1907 T.T. Race, and the next year pedals were abolished, and have not since been permitted in the race. *Verb. sap.*

ROY W. WALKER.

Drip Feed Lubrication.

[5651.]—In your Spring Number you gave an article on drip feed lubrication. As a novice I am sending you particulars of a simple drip feed which I fitted without any alteration to the existing parts of the machine. I obtained one of Davison's tor-edo plated tanks and a sight feed drip, as supplied by Hunt's Stores. The pipe from the drip feed was connected up by a union, as shown in the sketch, to the ordinary lubricating pipe. Of course, a non-return valve must be fitted, otherwise the oil is drawn back into the glass gauge of the sight feed. I have given this arrangement a seventy miles run with the drip set fourteen drops per minute, and find it about right, as my speed varied from 20 to 40 m.p.h., and on trying the crank case I found I had two pumpfuls left in the case.



A, tank B, union
C, sight feed gauge.

E. NEWBOLD.

Preserving Plated Parts from Rust.

[5652.]—I noticed a correspondent suggested recently a tip for preserving handle-bars and other plated parts from rust, by putting a coating of celluloid varnish over them. My local chemist tried cutting up old photographic films and immersing them in amyl-acetate, but, finding that the films were not soluble in it, he said that liquid court plaster would do just as well. I tried this and found it very satisfactory. One day lately, I left my machine out in a pouring rain for half an hour, and afterwards the sun shone, drying the water all away, and there were no signs of rust.

SA 644.

Hill-climbing.

[5653.]—In your issue of May 25th I noticed a letter from Mr. Samuel J. Dornan stating that a hill called Knocksoghey on the coast road between Ballycastle and the Giant's Causeway was climbed by Mr. W. Kerney and himself on Good Friday last, and that he was informed by residents of the district that never before was it climbed by a motor cycle. The hill is, undoubtedly, a steep one, and it is seldom climbed by motor cyclists, but that is not because of its gradient, but because the hill and the road, of which it is part, have a very bad surface. Tourists, therefore, avoid it, and why shouldn't they, when there is another road—a good one—which is only a mile longer. There is no reason, however, why a 3½ h.p. motor bicycle should not climb Knocksoghey, for in 1909 and 1910 I climbed it repeatedly on a 1908 3½ h.p. single-speed machine, and now, with a 1911 Humber, I do not consider I am performing a feat by climbing it.

A little over a year ago an Englishman took a sidecar and passenger up, and he had not a gale in his favour to assist him.

Lest anyone should think that I desire to pose as an expert motor cyclist I will adopt the pseudonym of

GUDGEON PIN.

Originality in regard to Signposts.

[5654.]—May I use your valuable columns to air a very vexed question? On a recent Sunday night it was necessary for me to travel on the road all night, by a route I had never been on before. There were, of course, signposts in abundance, but one thing I noticed most particularly, and it caused me no end of trouble, and that was, upon arriving at a village with perhaps three or four roads into it, there were no means of ascertaining which was the right one to take in order to continue the journey. This necessitated my awakening some of the inhabitants, and, although they kindly gave the necessary information, they did not appreciate by any means my disturbing of their slumbers in the middle of the night.

This could have been avoided if the local authorities had put up signposts at the road ends stating where the respective roads led to. The night was light, and there was, of course, no difficulty in seeing the signposts, where these existed. I feel sure that a little extra expense would be quite justified, and would not call forth any comment from the ratepayers.

At the same time I could not help but consider that a little more originality brought into use with regard to signposts would be a great advantage. They might state where they lead from and the place they lead to so far as the villages are concerned, and to what town the road really leads.

No doubt the new Road Board will be of great assistance in improving this long-felt want.

C. H. HITCHEN.

Passenger Classes at Hill-climbs.

[5655.]—With reference to "Ixion's" comments in the issue of the 25th ult., and more particularly his remarks on the passenger class at hill-climbs, we have communicated with Mr. E. B. Ware, and find that the machine he used so successfully in the M.C.C. hill-climb (passenger class) was his Chater-Lea three-speed No. 7 and coach-built sidecar. This machine is a standard touring model throughout, and is certainly not pared down, rather the reverse. We entirely agree that a restarting test should be included in the side-car class; as "Ixion" puts it, "the capacity to restart on a gradient is the first essential."

CHATER LEA, LTD.
A. W. SMITH.

A Tip for A.C. Users.

[5656.]—May I trespass on your valuable space once again in continuation of my letter which appeared in your issue of the 20th April.

I should like my fellow users of A.C. tricars to know that these machines can be made very much quieter by removing the fibre wheels which drive the cooling fans, and replacing them with leather or rubber ones. I have tried both and find them equally successful.

Nearly all the noise produced when the engine is running is made by these fibre wheels bouncing on the flywheels.

Further, leather and rubber wheels do not bounce, or if they do they bounce quietly, and it is astonishing the difference they make to the quietness of running.

Poona, India. R. T. PELLY, Lieut.

Garage Experiences.

[5657.]—I should like to publish the name and address of a certain garage and repairer, who charged me 2s. 6d. for fitting and grinding a new exhaust valve; time expended on the job, one and a quarter hours. The valve was supplied by me.

I asked him if he had not made a mistake, when he charged me another 6d. for storing—I left my machine overnight. I expostulated with him, when he charged me a further 6d. for storing! I protested against the increased charge, when he dared me to remove my machine till I had paid 3s. 6d.

As I use my machine for business and time was pressing, I paid 3s. 6d. under protest, and fearing it would go up another 6d. I was preparing to leave, when his son, who overheard the conversation, and, I presume, intervened on my behalf, came out and offered me 1s. back.

I think it only right that we should support the reasonable and civil repairer, and give the exorbitant and bleeding repairer a wide berth. A more ignorant and insulting man I have never met. I should like to see you warn your readers of him.

Always assuring you of my support, R 910.

[It should be obvious to most of our readers that we cannot publish the names of those motor firms which are alleged to overcharge motor cycle customers. Our correspondent's remedy is to join a motoring organisation and to deal with the official repairers appointed by that organisation.—ED.]

Road Dangers by Day.

[5658.]—In company with a friend I recently journeyed to Bridlington from Harrogate by motor cycle. The return journey was made *vid* Filey and Scarborough.

The predominant feature of the trip unquestionably consisted in the fact of almost running down at various intervals between Filey, Scarborough, and Malton, three or four individuals on push cycles. To say the least of it (if I may be pardoned for quoting beery or brewery vernacular) they were not absolutely "blind speechless to the world," but had more than "three sheets in the wind." One fellow was floundering all over the roadway—a danger to himself and the community. It would have been an easy matter for a motorist to have approached him from behind and not to have been aware that anything was wrong until he suddenly swerved in a totally unexpected fashion to the other side of the road. Possibly I might have been mistaken in thinking the man drunk, as the air was particularly ozonic and bracing, but this is an open question. It is easy to see how nasty accidents could happen.

Further on another surprise was given, due to meeting one or two others in the same predicament, which gives rise to the question, would it not be a good idea if the police kept a look out for such gentry and were not so keen on the motorist? Then there would be less need for patrols of the A.A. and M.U. *en route*. B. INGHAM.

A Kingston Danger.

[5659.]—I would draw the attention of other motor cyclists to the dangerous condition of London Road, Kingston, Surrey. While riding a lightweight machine there slowly and cautiously a few days ago, it was positively carried from under me owing to the part of the road carrying the tramway (not the tramrail itself) projecting some two inches above the adjoining surface, with the result that I was thrown across the tramlines, and, luckily, a following tramcar had just time to slacken pace. Had we been closer together, nothing could have prevented the tramcar running over me, and no blame whatever would have attached to its driver.

The neglect of road authorities properly to maintain busy thoroughfares, where the exigencies of traffic demand the use of any part of the roadway, undoubtedly conduces materially to the occurrence of many fatal accidents.

L. H. LEGG.

A Lady's Experience of Hill-climbing.

[5660.]—I have much pleasure in sending you herewith a photograph of myself on a 2¾ h.p. two-speed Royal Enfield lightweight. I have tried several of the best-known makes, but for a lady's mount this is certainly the best I have ridden of the closed frame type, and I thought my experiences might encourage other ladies to try.

It was suggested by a friend who rides a 3½ h.p. that we should try Weatheroak Hill, near Alvechurch, which has a reputed steepest gradient of 1 in 5½. The way in which the machine roared up on low gear greatly astonished the villagers, who afterwards informed me that I was the first lady they had seen climb it. The next day broke out fine and bright, and in very good spirits I once again mounted the little twin, and together with my friend on his 3½ h.p. we set off.

The writer astride her diamond frame Enfield.

On Fisb Hill, Broadway, my friend was anxious to show me what he could do. This hill was quite strange to me and the sharp corners proved my undoing, as I was too late putting in the low gear. Nothing daunted, however we returned again for another trial, this time on low gear all the way, and the engine accelerated so quickly after each corner that I reached the top quite fifty yards ahead of the 3½ h.p. Although I had ridden about eighty miles and this was my first long ride, I finished up quite fresh.

TRISSIE CUTLER.

The Flying Kilometre Record.

[5661.]—Regarding the claim by Mr. Dan Bradbury, of the Sheffield and Hallamshire M.C.C., of having broken the record for the flying kilometre in the above club's event, on a standard touring engine, might I suggest to Mr. Bradbury that it would have gone further to substantiate his claim if he had allowed his engine to be measured and inspected by the club officials, instead of sending same away to the makers.

I do not suggest that these measurements were not correct, although it is now beyond the club to verify the same.

ERNEST H. LONGLEY.

Motor Cyclists' Experiences in Far-off Lands.

[5662.]—We were very interested in the recent batch of letters to *The Motor Cycle* from readers in the colonies and far-off lands, which show the way your paper circulates all over the world.

The mistake that many motor cyclists make (especially those in the colonies) is to think that busy manufacturers are going to make one machine to conform with all their special fads and fancies. As Mr. Basil Davies truly remarks in his excellent article on the quadcar, this catering to individual requirements has caused several makers to put up their shutters in the past.

Our standard 2½ h.p. three-speed New Hudson has a crank case clearance of over six inches, and it could be wheeled through fifteen inches of water without wetting the magneto. Also, of course, it scores in being able to negotiate very rough, hilly roads slowly, and in being able to restart without the rider having to push off on a road covered with loose stones like a shingle beach. Those who have attempted this gymnastic feat with a fixed gear T.T. machine, as I have in the wilds of Wales, will appreciate the difference between running for dear life and sitting in the saddle and restarting on the clutch.

It is obviously impossible for anybody to get a machine embodying the special features of a dozen leading makes.

There is evidently something very like a boom in motor cycles at the present time in the colonies, especially South Africa and Australia, and the number of enquiries we are receiving from abroad (many through the agency of *The Motor Cycle*) are proof of this. Our only trouble, however, is to keep pace with home orders.

THE NEW HUDSON CYCLE CO., LTD.
ROY W. WALKER.

Is the Spider Quad Coming to Stay?

[5663.]—The most interesting contribution under the above heading by Mr. B. H. Davies should be carefully read by all who have the welfare of the motor cycle at heart. At this time of day the trade have learnt their lesson regarding three-track machines. Except for good roads and town work they are as dead as mutton. But it must be remembered that piling on horse-power accelerated their downfall. A spider quad on cycle lines may have a future, but it must be light, and therefore necessarily air-cooled and of medium horse-power. It cannot for the moment compare with the motor bicycle of equal or even half the horse-power for speed or handiness in difficult country over bad or rutty surfaces. However, with this form of motor cycle no driver should be able to keep warm and clean, no warmer or cleaner, however, than the writer can keep on a light-weight machine fitted with proper non-skid tyres and effective mud shields. As has been pointed out hundreds of times, the worst advertisement the motor cycle can have is the mud-spattered winter rider slithering about on a greasy road on a high-powered, single-speed motor bicycle.

But now we have got two-speed, multi-cylinder, low-powered, low-built motor bicycles, on which that absurd anomaly on a motor vehicle—pedals—has been abolished. These machines can be started on the low speed in their own length by a firm push with the foot on the ground while the rider is safely seated in the saddle. When under way the feet are tucked away out of the dirt behind the mud shields, the high speed is let in, and the journey is done through mud, rain, snow, or hail with the certainty that at the journey's end the rider will be warm, dry, and clean. Why add 3 cwts. to the total weight, and two tracks, with increased windage? The old stagers such as myself (who raced on tricycles from 1881 to 1884) will have none of these half and betweens. We hate increased horse-power, and look upon every extra 50 c.c. as added worry. This may be taken as the writer's answer to "Colonial" [5640].

If 15¼ stones can be carried round here (Lambourne, Berks) on a pedalless two-speed 2¾ h.p. Douglas, the average colonial (who, in Australia and New Zealand, is of spare build) will not require any higher-powered engine if he takes advantage of his two-speed. Mine has now run 8,000 miles, and out of curiosity the gear box was opened up in the works the other day. No sign of wear is to be seen. Why then should intending motor cyclists be fobbed off with a nondescript vehicle which is not a car and not a cycle, but has the vices of both, when by development along the proper lines, multiple speeding, effective weather-guarding, and anti-skid devices, the multi-cylinder air-cooled bicycle will fill the bill? In the writer's own immediate circle of acquaintances four men, whose ages vary from fifty to sixty-four years of age, are riding these machines on their ordinary business tours with safety and benefit to both health and pocket.

CHARLES S. PATTERSON, M.B., M.R.C.S.

External Band Brakes.

[5664.]—With regard to the question of external band brakes, I had a foot applied external band brake, fibre lined (copper riveted), fitted to my 3½ h.p. Minerva motor cycle. This was very powerful and quite as good as a belt rim brake. I think if Mr. C. Parkes has his brakes lined with fibre, and a fairly strong spring fitted to release brake when it is not in action, he will find the external band brake quite satisfactory, as I and many other riders of Minerva motor cycles have done.

C. T. TAILBY.

Motor Cyclists and the Military Authorities.

[5665.]—I see in a recent issue that "Celeriter" has broken out afresh, and is once more falling foul of the military authorities.

Motor cyclists seem unable to comprehend that the War Office, or whoever it is who decides these matters, do not want motor cycles, and consider them unsuitable for war.

A far better way than pushing themselves and their "jiggers" where they are not wanted would be for motor cyclists to join the ranks of the ordinary territorial force, as commissioned officers if they have the means, or in the ranks if their means are limited. They would have a splendid time during their military training and have the satisfaction of knowing they were training themselves to be of some use to their country in a time of emergency, which would not be the case, I am afraid, if they were only "motor cycle scouts" or something of that sort.

W.H.D.

At the finish of the London-Edinburgh Run. P. Shaw (3½ h.p. P. and M.) being timed in at Netber Liberton, Edinburgh.

CURRENT CHAT

TIME TO LIGHT LAMPS

(GREENWICH)

June	8th	... ..	9.12 p.m.
,,	10th	... ...	9.13 p.m.
,,	12th	... ...	9.15 p.m.
,,	14th	... ...	9.16 p.m.

"The Motor Cycle" Summer and T.T. Number.

Our Summer and T.T. Number to be published on Thursday, June 29th, will contain many special articles and illustrations of great interest.

Coventry Amateur Team.

Amateurs only have been chosen to represent the Coventry and Warwickshire M.C. in the Team Trial on June 17th, only one of the famous Coventry "non-stop" team of 1910 being eligible as a result. See Club News.

Lightweight Dimensions.

The cubical capacity of the new Singer lightweight will shortly be increased to 298 c.c. The new dimensions will be 66 mm. × 87 mm. The limit for the single-cylinder Junior T.T. class is 300 c.c.

Humber Experiments.

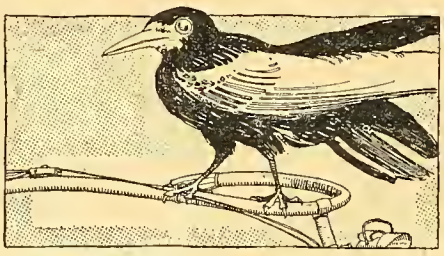
Always alive to probable developments and improvements, Humber, Ltd., are experimenting with a water-cooled engine on one of their motor bicycles. A lady's open frame lightweight has also been built up, but it is not intended to adopt this model as a marketable production, for some time at any rate. A well-known lady motor cyclist is to put it to an exhaustive test.

W. Pratt Convalescent.

We are pleased to inform our readers that W. Pratt, who was prevented, owing to illness, from starting last month on his 1,000 miles ride under A.C.U. observation, is now well on the way towards recovery. Unfortunately, his medical adviser could not agree to allow him to compete in the London-Edinburgh run, but he hopes to be on the warpath again very soon. Owing to the number of kind enquiries he received he finds it quite impossible to reply to them all individually, and takes this opportunity of conveying his best thanks through the medium of *The Motor Cycle*.

A Timely Warning.

Last year, in crossing to the Isle of Man, a number of motor cyclists thought they had done something smart in leaving a pint or so of petrol in their tanks at Liverpool, and evading the officials. We admit that it is a nuisance to push it the nearest garage on landing at Douglas, but if one stops a moment to consider the danger run in carrying petrol on the boat with passengers smoking, the risk is not worth running, as the consequence might be terrible in the extreme. Parties of motor cyclists crossing to the island who wish to avoid the ignominy of pushing should wire a garage in Douglas to meet the boat with a specified number of tins of petrol



Stolen Machines

Two new 1911 free engine Triumph motor bicycles were stolen from Robinson's Garage, Regent Street, Cambridge, on the 25th ult. The numbers of the frames are 172387 and 173627.

A 1911 3½ h.p. Premier was stolen from outside the premises of Maude's Motor Mart, 136, Great Portland Street, W., one day last week. The engine number is 5,396, and frame number 5,753.

The Shops Bill.

Motor cyclists who use their machines at the week-end, and few do not, will be glad to note that the Shops Bill will not interfere with the sale of petrol, etc., on Sundays. The secretary of the R.A.C. has received the following letter in response to his enquiry addressed to the Home Secretary on the subject:

"With reference to your letter of the 22nd May, suggesting on behalf of the Royal Automobile Club an amendment of the Shops Bill, I am directed by the Secretary of State to say that he is advised that the garaging or hiring, repairing, or cleansing of cars and cycles at a garage, or the getting ready of a private car which is kept at a garage would not come within the scope of the Bill as it stands.—(Signed) HENRY CUNYNGHAME."

SPECIAL FEATURES

The Eighth Annual London-Edinburgh Run.

A Trip in the Transvaal.

Racing Machines and Change-speed Gears.

Holiday Tours and Competitions.

E. Gwynne Recovering.

E. Gwynne, whose accident we reported in our last week's issue, is, we understand, making a very favourable recovery.

Practising for the T.T. Races. Important Announcement.

Entrants for the Tourist Trophy race in the Isle of Man are to be allowed an extra week for practice over the course, that is, practising may begin on Thursday next, 15th inst., and continue up to and including Saturday, July 1st (Friday, June 30th, of course, excepted, that being the date of the Junior Race). This concession has been made by the authorities, subject to it being clearly understood that those engaging in practice do so at their own risk, and confine it to between the hours of 5 and 7 a.m. on week days only.

BROOKLANDS WHIT-MONDAY MEETING.

P. Weatherilt (2¾ h.p. Zenith-Gradua) crossing the finishing line an easy winner of the 5¾ miles handicap.

The Tourist Trophy Fund.

Further contributions to the above fund have been received from :

J. K. Starley	£1	1	0
Motor Cycling Club ...	5	5	0
Bowden Wire	5	5	0
Phelon and Moore	5	5	0
Coventry and Warwickshire M.C.	2	2	0

The total amount contributed is now £71 6s. 6d.

Tourist Trophy Notes.

Matchless machines will be well represented in both T.T. races, the following being the riders in the Senior event: H. A. Collier, C. R. Collier, Percy Johnson, R. Ellis, B. Mason, W. Jœpson (of New Zealand), and W. Lang.

H. H. Bowen tells us that he will ride a twin Bat-Jap.

There will be four 3½ h.p. Ariels in the T.T., the riders being A. V. Sumner, F. C. North, H. Rem Fowler, and S. C. Perryman. The T.T. Ariels have a bore and stroke of 86.5 × 85 mm., a dropped top tube to give a low saddle position, and a tank holding one and a half gallons of petrol. The carburetter employed is the new B. and B. with variable jet. It is most probable that all will have Armstrong three-speed hubs. Experiments are now proceeding with the gear.

The L.M.C., which will be ridden by J. H. Slaughter will have a neat two-speed gear of diminutive dimensions. His engine will be of the usual 85 × 88 mm. pattern, with the racing pattern piston we recently described and illustrated.

There will be a trio of Triumph trade riders in the race, although only two were originally entered. Their names are W. F. Newsome, W. Creyton, and A. V. Walden. It is quite likely that the T.T. Triumph will be the most standardised machine of the whole lot entered, for no important deviation will be made from the single-geared model listed, except, perhaps, a larger tank. One of the T.T. machines is to be tried with the Triumph multi-plate clutch in the rear hub for coasting down the mountain

A device is being given an extended trial on one of the two-stroke Scotts which will render the machine very much more flexible, besides improving the fuel consumption. It is worked by the engine itself mechanically, and will probably be fitted for the T.T. race.

The directors of Humber, Ltd., have decided not to enter for the Senior T.T. race, but have entered two of the new 70 × 60 mm. lightweight twin-cylinder machines in the Junior event. The riders nominated are Sam Wright and A. G. Penn.

The Rex Company are busy with a water-cooled machine which may probably be used in the great race.

The course for the kilometre trials on the Douglas promenade has now been approved by Messrs. Nisbet and Straight.

The probable events will be a handicap for local motor cyclists, with machines up to 1,000 c.c.; a contest for the Junior T.T. Class; and a contest for the Senior T.T. Class.

492 Miles per gallon. Is it Possible ?

In the Huddersfield M.C.C. petrol consumption test a Moto-Rêve rider named T. P. Crosland is supposed to have covered the twenty miles undulating course with a consumption of six and a half ounces of petrol, equal to 492 miles per gallon. A confirmatory run is to be made in view of such astounding figures.

FUTURE EVENTS.

June 10—A.C.U. Race Meeting.
„ 10—Nottingham and District M.C.C. Open Speed Trial at Clipstone.
„ 10—Birmingham M.C.C. Open Hill Climb.
„ 10-11—Bradford M.C.C. Bradford to London and back. Twenty-four Hours' Open Reliability Trial.
„ 17—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
„ 29—"The Motor Cycle" Summer and T.T. Number.
„ 30—Junior T.T. Race in the Isle of Man.
July 3—Senior T.T. Race in the Isle of Man
„ 4—Kilometre Speed Trial on the Douglas Promenade, Isle of Man.
„ 8—A.C.U. Met. Centre Eliminating Trial for Club Championship.
„ 15—A.C.U. Mid. Centre Open Hill Climb.
„ 22—A.C.U. Quarterly Trial (Northern).
„ 29—Bradford M.C.C. Open Hill Climb and suggested speed trials.

Another Six Days' Ride.

W. J. Clarke, Doncaster, is an aspirant to six days' honours, and intends to make three trips per diem between Doncaster and Mablethorpe, the distance out and home being about 150 miles. He started at midnight last Sunday, but magneto trouble caused a breakdown on the second journey. We understand he started again last Monday at 12 p.m.

A.C.U. Six Days' Trial Notes.

It has been decided to divide the entrants in the Six Days' Trial, which is to be held from August 14th to 19th, into the following classes: 1—Minor, for engines not exceeding 340 c.c. 2—Medium, for engines not exceeding 585 c.c. 3—Major, for engines not exceeding 1,000 c.c. 4—Passenger—No limit to cubic capacity.

The minimum and maximum speeds will be fixed at seventeen and twenty miles per hour for the Minor and Passenger Classes and eighteen and twenty miles per hour for the Medium and Major Classes.

A special prize will be awarded for the best performance by a team of three private owners nominated by an affiliated club. The nominees must all be members of the nominating club. This prize will only be awarded provided at least five teams are nominated.

Paris to Trouville.

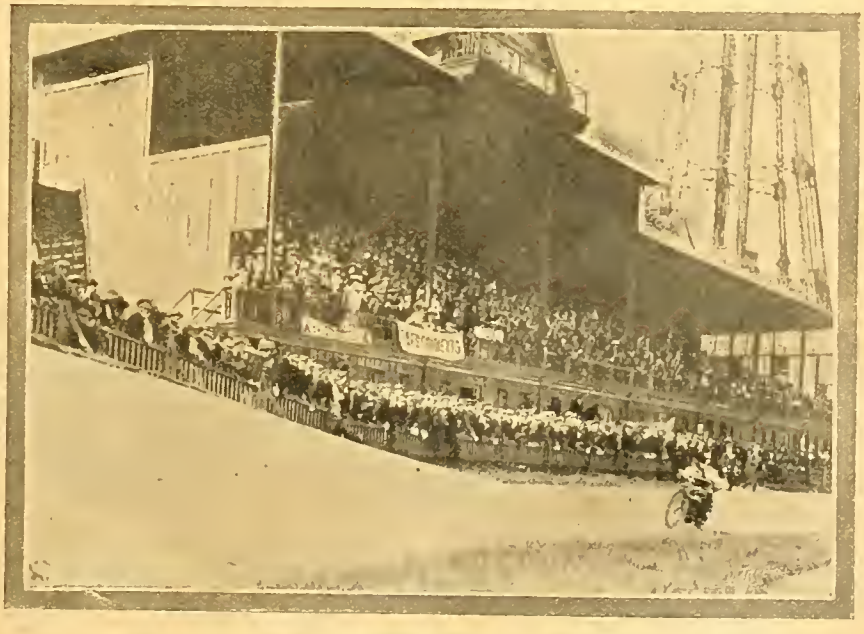
On Sunday last a motor cycle race between Paris and Trouville was run off by the Touring Motor Club. Class I. (lightweights) was won on a 2 h.p. Alcyon, in 4h. 20m., a N.S.U. was second, and a Motosacoche third. In the heavyweight class a mixed tandem took part. This was a Rene-Gillet, and it finished in good time.

Auto Cycle Union Race Meeting.

The under-mentioned riders are down to compete at the above race meeting at Brooklands next Saturday: Martin, Dayrell, Witham, C. B. Franklin, W. F. Newsome, G. E. Stanley, Percy Butler, A. J. Sproston, C. R. Collier, and S. T. Tessier.

Intending competitors at the race meeting next Saturday are reminded that their motor cycles must be fitted either with an efficient silencer or with an exhaust pipe complying with the 1911 A.C.U. Tourist Trophy Regulations. No motor cycle fitted with open exhaust will be allowed to run.

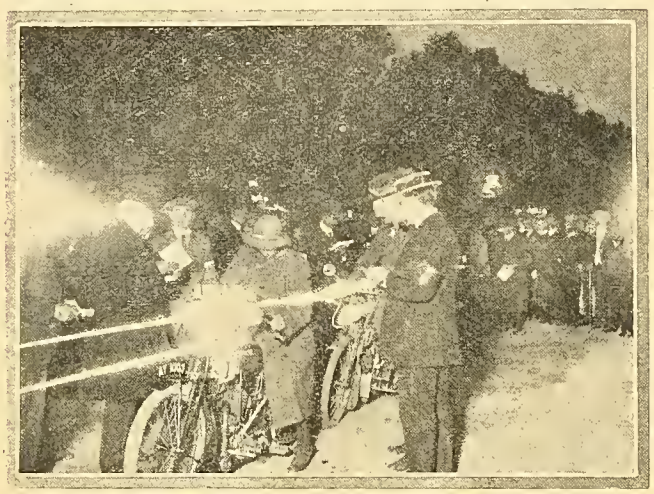
J. de Rosier's first appearance on an English track will be made at the A.C.U. race meeting next Saturday, when he is announced to make an exhibition ride. He will also probably attempt record.



E. F. Baxter (7 h.p. Rex), who lowered the mile record at the New Brighton track on Whit-Monday
The new time is 1m. 4⅕s.

LONDON — EDINBURGH RUN

THE weather conditions on Friday evening, June 2nd, were absolutely perfect for the great M.C.C. Run to Edinburgh—the eighth annual event. It was gloriously fine and warm, while a few days old moon shone after dark to light the competitors on their way North. The fact that a larger entry than on any previous occasion had been received accounted for much interest being taken in the start, which took place as usual in the wide open space so admirably suited for the purpose outside the Old Gate House Hotel, Highgate.



The start from Highgate on Friday evening. Cyril Bailey (3½ h.p. Rudge) leaving.

At an early hour numerous keenly interested spectators gathered round the competing machines, and as the evening wore on their numbers were augmented by an ever increasing throng. All the motor bicycles were drawn up in numerical order on the offside of the road, and behind them were the passenger machines. All were sealed by hard working officials under the direction of Mr. L. A. Baddeley while Messrs. G. C. J. Seed and A. Carpmael looked after the distribution of the numbers.

An Inspection of the Competing Machines.

A hasty inspection of the machines, which was made just before the start, revealed several interesting features. Gordon Watson (5-6 h.p. F.N.) had an R.A.C. badge fastened on his head light, the first we have seen on a motor bicycle. W. E. S. May (5 h.p. Portland-Jap) had his route card neatly fixed in a frame and electrically lighted, while he also used a comfortable pan seat. J. R. Brown rode a Lincoln-Elk with a huge petrol tank. H. B. Karslake rode his famous Dreadnought, now on its third trip to Edinburgh. Pratt was forbidden to compete by his doctor, as he had not sufficiently recovered from his recent illness, but he was able to do excellent work as a marshal. His number was allotted to Capt. Sir Robert Arbuthnot, R.N. (3½ h.p. Triumph), who sailed in H.M.S. *Blenheim* on Thursday from Kirkwall and landed at Harwich that afternoon.

Karslake was the only man riding a motor bicycle not to employ a magneto. G. W. Raper (6 h.p. N.S.U.) used an electric lamp to illuminate his watch and speedometer. Ex-police Superintendent Vedy rode a 5 h.p. Salway and sidecar, and took his daughter with him. W. H. Wells and G. Lee-Evans used dissolved acetylene on their Indian machines and were much delighted by the steady light it gave. Amongst the machines which competed in the passenger class were the Chater-Lea quadcar and the Morgan runabout.

The Start from Highgate.

H. G. Bell (5-6 F.N.), the trials hon. sec. for this competition, was the first man to leave. Punctually at 9 p.m. he was despatched by F. T. Bidlake. The men started in a space admirably kept clear for them by the police. At the start, night was turned into day by acetylene lamps fed by A.L. generators. Messrs. Jenkins, Sharp, Bray, Pratt, and Marians all worked with a will to help Bidlake, and the men were sent off at thirty seconds intervals in a wonderfully smart manner.

Time and again the advantage of the free engine two-speed machines was demonstrated, as their users comfortably seated glided with ease away into the night at the word "Go." Brough, riding a 3½ h.p. Brough, is the present holder of the challenge cup. His machine was the essence of un-

The scene at Highgate. Competitors assembling for the start.

Outside Ye Olde Gatehouse Hotel, Highgate Hill, N.

London-Edinburgh Run.—

A stop for replenishment at Doncaster at 5.30 a.m. on Saturday last.

ostentatious neatness. G. A. Reed's 3¾ h.p. Scott ticked round quietly in free engine, and glided away with surprising sweetness when the word to go was given, while the two A.J.S. machines got under way with extreme ease. Mabon, who was riding a Rudge to which his gear was fitted, was another competitor who made a comfortable and easy start. Each man on leaving was warned that the police were working a trap at Prickler's Hill, near the foot of the ascent into Barnet, and in consequence everyone exercised great caution. Mr. Charles Jarrott, the president, in his 15 h.p. Napier, in company with Mr. A. Candler, the hon. sec., and Mr. R. H. Head, chairman, started well before the other competitors. Mr. Jarrott took the greatest interest in the affair, and, we are informed, became most enthusiastic about it. Mr. Birkin, driving a B.S.A. car, acted as reserve.

Except for the dust, which was not nearly so bad at the start as later in the day, the travelling conditions were ideal, and a splendid run was made over the excellently-surfaced and tarred roads of Hertfordshire to Hatfield, the first check. Fairall (3½ h.p. Triumph) had tyre trouble near Welwyn. Near Stevenage we overtook Godsal (6-7 h.p. Bat), who was sitting in the sidecar and driving, a position which he varied occasionally by getting into the saddle. C. Percival (6 h.p. Zenith-Gradua) was another man who took an empty sidecar with him, but he found a passenger at Newcastle, and so finished the journey with a companion. In the same locality Stallebrass (2¼ h.p. F.N.) suffered a series of trouble which led to his ultimate retirement. A splendid run was made to Biggleswade, the competitors spread out somewhat, there was less dust, and the roads were excellent. The people at the Swan Hotel provided appetising light refreshments, and outside the cosy inn there was a large number of competitors. Mabon and Ware reported lamp troubles, and beyond the town Slatter (2 h.p. Aleyon) and Fairall near Buckden also had head light troubles. But *pannes* of this kind were few and far between, as lamps and generators have improved enormously of late.

So fine was the night that Saturday morning had hardly begun before the glimmer in the East heralded the approaching dawn. One by one the stars faded before the approaching daylight, and, though the sky was for the most part clear, a bank of clouds hid the sun, and the atmosphere became much colder. At Norman Cross, Frank (7 h.p. G.O.K. and s.c.) suffered tyre troubles, and a mile or two back Olsson (Oxted-Jap) had a nipped rear tube. Mussell (7 h.p. Rex) lost his compression tap while approaching Grantham. About three miles from this town there was a patch of unrolled metal which was indicated by two A.A. and M.U. scouts, a fact which was much appreciated by the riders. De Rosier, however, thought they were policemen about to stop him, so he went all out and took the stones with a rush.

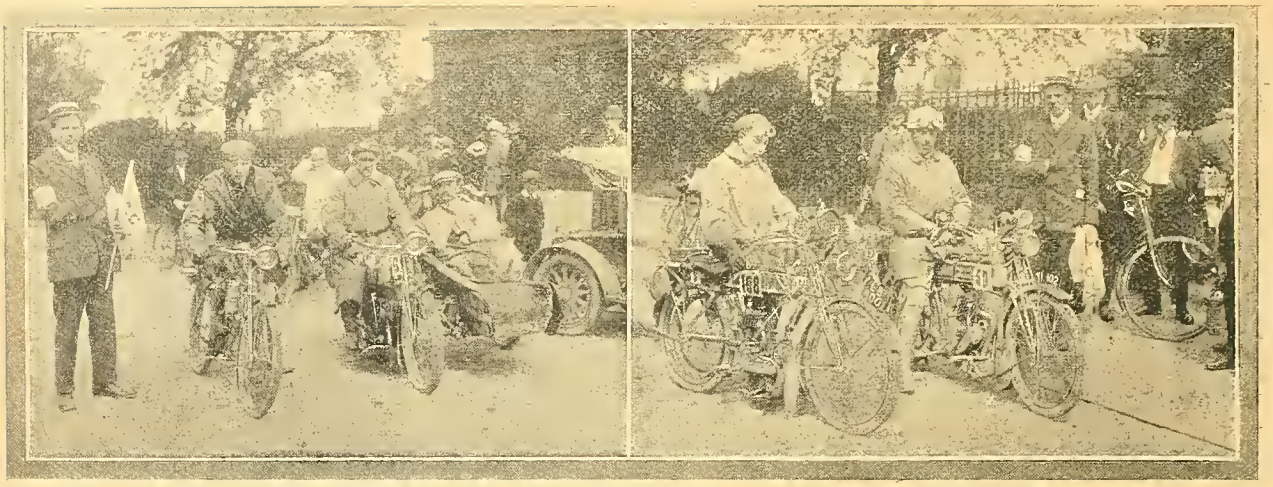
An excellent breakfast was served at the George Hotel at Grantham, where the third check was situated, and here it

A scene of activity in the garage at York.

was noticed that Vedy and Chater-Lea were missing. Hugh Gibson (Bradbury and sc.) was seen at a standstill in Retford, Haslam (Triumph) had tyre troubles a little further on, and a similar fate befel Love (Triumph) at Ranskill

(1) Signing the checking sheet at the Station Hotel, York

(2) Eli Clark (2½ h.p. Douglas) and J. R. Brown (3½ h.p. Lincoln Elk).



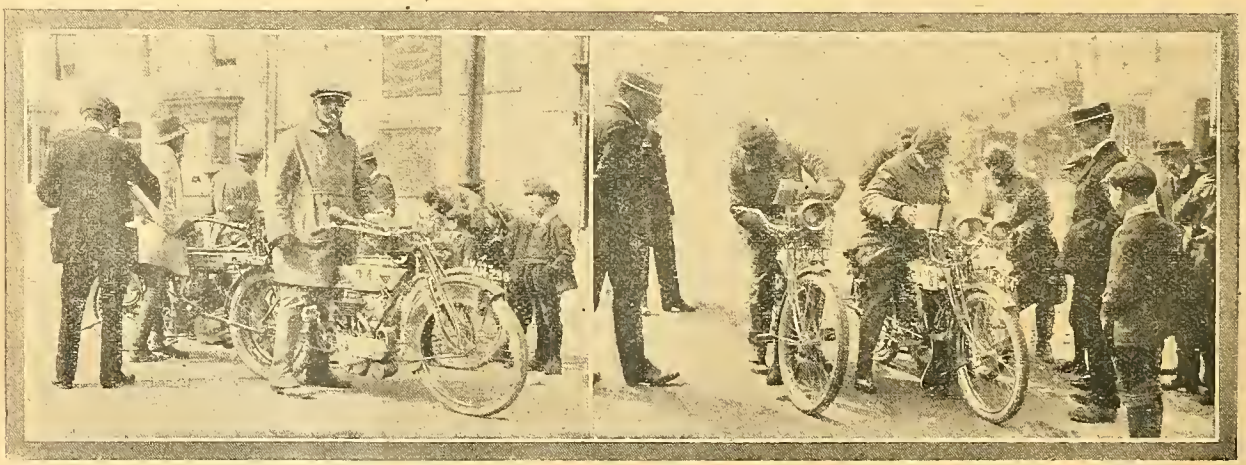
(1) H. Williamson (7 h.p. Rex sidette) and G. Griffith (Moto Reve) at the York control.

(2) H. C. Maybury (3½ h.p. H.A.L.) and A. M. C. Scott (3½ h.p. Rudge) leaving York.

It was still very cold, but the men could only endure it and pray for the sun to come out, which it did not do till they were well on their way to York. W. Cooper (3½ h.p. Brown) had the magneto sprocket come adrift—an incident which caused him a delay of three hours. W. E. Haines (8 h.p. Bat and s.c.) had clutch trouble near Doncaster, and near this town Kickham (2¾ h.p. Douglas) had plug trouble. Gibson stopped to tighten his belt at Wentbridge, where there is the steepest hill between London and Newcastle. The way to the Station Hotel, York, where was the fifth check, was excellently marked by means of arrows, and at the hotel a splendid breakfast was served. Fortified by this and by the fact that the sun shone warmly in a clear blue sky, the men started away in a very happy frame of mind, and the journey on the next stage was continued on excellent roads, carefully protected by the splendid East Riding police, who were stationed at all dangerous places along the roads. Near Easingwold, Whitmore (5½ h.p. Rudge) had to disconnect his speedometer. Love had a front tyre puncture near Thirsk, while a little farther on we overtook W. A. Jacobs and Le Grand, who have earned for themselves the nickname of "the inseparables." Dear (2 h.p. Humber), whom we had last seen walking his machine at Neville's Cross, went to sleep, ran into a ditch, and bent his forks. He had had other trouble, and had had no food before he reached Thirsk, but he eventually reached Newcastle, where he retired with an injured ankle. Wray (3½ h.p. Bradbury and s.c.) stated at Darlington that his engine was not pulling well.

Leaving Darlington, good progress was made to Neville's Cross, where the route neatly avoids Durham. This was well marked by arrows, and the police gave every assistance in directing the men. At Framwellgate, W. E. Haines (8 h.p. Bat and s.c.) had a front tyre puncture. At Ferryhill the colliery district was reached, and the going from that point to Newcastle was not of the pleasantest. At the latter town, where the seventh check was situated, a very hearty welcome was extended to the competitors by the Newcastle and District M.C., whose members managed the check and arranged a capital lunch at their clubhouse. Here Wray endeavoured to improve the running of his engine by fitting a new exhaust valve spring.

After Newcastle the road was execrable, the surface being of the very vilest description. The route, however, became more interesting and more difficult, as the Cheviots provided several long climbs which, as the afternoon was hot and there was a following wind, proved rather trying. By far the longest climb was Carter Bar, which leads up to the Scottish border. Up this hill, which is a miniature mountain pass, we saw the following machines fitted with sidecars climb in good form: A. E. Catt (3½ h.p. Triumph), J. Chater-Lea (8 h.p. Chater-Lea), F. Smith (5-6 h.p. Clyno), T. G. Proctor (7 h.p. Indian), H. Gibson (3½ h.p. Bradbnry), A. J. Clayton (3½ h.p. Humber), who rode up slowly as his rear wheel was buckled, G. Wray (3½ h.p. Bradbury), and the Morgan runabout. Ware at this point suffered broken forks, and a little further on he broke a tube of his sidecar frame. It is a wonder there were not more breakages, as the surface was appalling, which may be accounted for by the motor char-à-banc service which plies along this route.



(1) R. M. Brice (3½ h.p. Brown), B. A. Hill (3½ h.p. Rudge), and B. Marians (P. and M.) preparing to restart from Northallerton.

(2) P. Bentley (3½ h.p. Triumph), A. V. Sumner (3½ h.p. Ariel), and R. B. Clark (5 h.p. Indian) turning over the route cards.

The Indian tribe, including W. H. Wells and Jake de Rosier, at the Northallerton check.

A halt to sign the checking sheet at the Northallerton control.

The road from the foot of Soutra to Dalkeith is equally ...rocious for the same reason. Sir R. K. Arbuthnot broke ...spring in his forks, but he was fortunately able to replace ... at Doncaster. At Jedburgh, where was the eighth check, ... excellent tea was served at the Royal Hotel. The ...untry was now perfectly lovely and quite hilly, the hills ...lminating in the ascent of Soutra. Near a village called ...ord we found Fairall in trouble, and he retired. Brough, ...no at Newcastle was heard to remark that his machine ...as going so well that all he had to do was to sit still ...d see the milestones go by, reckoned that as regards ...me he was only three minutes out at Jedburgh. Kars... ...ke was delayed by inlet valve trouble, and gave up all ...ea of competing for the cup. F. E. Flint (3½ h.p. ...nith) twisted the back stays of his machine and found ... could only take corners comfortably in one direction. ...i Clark (2¾ h.p. Douglas), in pulling up suddenly to avoid ...nning into a woman, cut his hand badly. At last the ...al check, the ninth was found at Liberton, and save ...r the last two miles through the Edinburgh traffic the ...urney was over.

Although this is the eighth run of the kind the M.C.C. has ...ld, interest in it appeared to be as keen as ever, and ...erywhere the competitors had a royal reception. The 1911 ...ndon to Edinburgh run has been a record in more respects ...an one—firstly, on account of the splendid number of ...tries, and, secondly, owing to the exceptional weather. ...e dust, however, was terrible, especially in Scotland, where ... dust prevention question appears to have escaped the ...tice of the authorities. Of the 104 motor bicycles which ...rted, ninety-six arrived to time, and of the entrants only ...e failed to start. One of these was Gwynne, who, as a ...ult of his accident on the 27th ult., broke his wrist.

...emporary open-air garage in front of the Newcastle and District M.C. premises.

A Big List of Survivors.

Those who completed the outward journey successfully were:

H. G. Bell (5-6 F.N.)
L. A. Baddeley (4½ Baddeley)
+B. A. Hill (3½ Rudge).
D. S. Baddeley (6 Baddeley).
F. E. Flint (3½ Zenith).
C. G. Watson (5-6 F.N.)
+C. Bailey (3½ Clyde).
W. E. S. May (5 Portland-Jap).
R. B. Clark (5 Indian).
+A. V. Sumner (3½ Ariel).
G. A. E. Ward (3½ Arno).
P. Bentley (3½ Triumph).
C. S. Lake (3½ Arno).
+J. W. Woodhouse (3½ Mead)
M. Duke (3½ Triumph).
•E. Pond (3½ Rudge).
+H. Greaves (2¾ Enfield).
•E. B. Dickson (8 Bat).
V. Olsson (8 Oxted-Jap).
E. Cherry (3½ Rover).
+W. B. Gibb (2¾ Douglas).
R. M. Brice (3½ Brown).
+E. Clark (2¾ Douglas).
B. Marions (3½ P. and M.)
G. E. Higgs (3½ Triumph).
+P. Shew (3½ P. and M.)
•J. R. Brown (3½ Lincoln Elk).
H. R. Whitmore (3½ Rudge).
+H. Karslake (4 Dreadnought).
P. Gront (2¾ Douglas).
G. L. Fletcher (2¾ Douglas).
Capt. Sir R. K. Arbuthnot, Bt., R.N. (3½ Triumph).
W. O. Bentley (7 Indian).
W. Cooper (3½ Brown).
+E. Kickham (2¾ Douglas).
H. W. Turner (3½ Triumph).
+R. Ellis (3½ B.S.A.)
+R. Croucher (3½ Kerry).
+S. Webb (3½ Bradbury).
F. Watson (3½ Triumph).
+H. A. Cooper (3½ Bradbury).
•F. W. Applebee (3½ N.S.U.)
+C. S. Burney (3½ Rudge).
A. M. C. Scott (3½ Rudge).
+G. Brough (3½ Brough).
•A. Webster (2¼ Hobart).
+G. A. Reed (3½ Scott).
F. E. Wasling (2¾ Enfield).
G. W. Raper (6 N.S.U.)
W. Atkinson (4 Cheviot).
+W. Hornsby (4 Cheviot).
•J. P. Le Grand (5 Rex).
+G. E. Purchase (3½ Triumph).
•W. A. Jacobs (5 Rex).
+J. S. Holroyd (2½ Motosacoche).
•F. White (7 Rex).
+A. J. Sproston (3½ Rudge).
•W. H. Elce (3½ Rudge).
•F. E. Pither (5 Rex).
+G. T. Gray (3½ Rudge).
Dr. C. J. Stanley (5 Indian).
+R. C. O. Wells (3½ Bradbury).
G. Stevens (2¼ A.J.S.)
+J. R. Haswell (3½ Triumph).
J. Stevens (2¼ A.J.S.)
+V. Deacock (4 N.L.G.)
•A. Mabon (3½ Rudge).
G. Griffith (2¼ M.R.)
+G. W. England (2¼ M.R.)
S. T. Tessier (5 Bat).
+F. C. North (3½ Ariel).
+G. Boswell (3½ Ariel).
C. W. Smith (3½ Ariel).
W. F. Guider (3½ Kerry).
Roy Walker (2¼ New Hudson)
+W. C. Heory (3 Wanderer).
W. Price (5 Rex).
H. E. Davison (5 Rex).
+A. C. Robbins (3½ Humber).
J. Culley (3½ Triumph).
J. P. Begg (2¾ M.R.)
+J. L. Love (3½ Triumph).
C. E. Lovett (3½ Bat).
•F. Mussell (7 Rex).
J. Haslam (6 Zenith).
S. Sayer (3½ Premier).
H. V. Swift (2¾ Douglas).
F. Taylor, jun. (7 Indian).
•R. G. Munday (3½ Triumph).
•N. D. Slatter (2 Alcyon).
H. R. Pratt (3½ Arno).
H. C. Maybury (3½ H.A.L.)
A. J. Duncan (3½ Rex).
F. Gibbons (3½ Triumph).
O. C. Godfrey (7 Indian).
J. de Rosier (7 Indian).

+ Denotes entered for M.C.C. Challenge Cup.
• Entered for special return journey gold medal.

Of the retirements, Stallebrass (2½ h.p. F.N.), as previously referred to, suffered numerous troubles. A. G. Orchard (3½ h.p. Premier) retired at Northallerton through cam trouble. N. Dear (2 h.p. Humber), over-fatigued, ran into a ditch and bent the forks; he retired beyond Newcastle. J. Dawson (3½ h.p. Triumph) reason not stated. E. Chaytor (3½ h.p. Humber) ditto. T. W. P. Taylor (3½ h.p. Arno), ditto. N. G. Fairall (3½ h.p. Triumph), gudgeon pin trouble nine miles from Edinburgh.

Successful Passenger Machines.

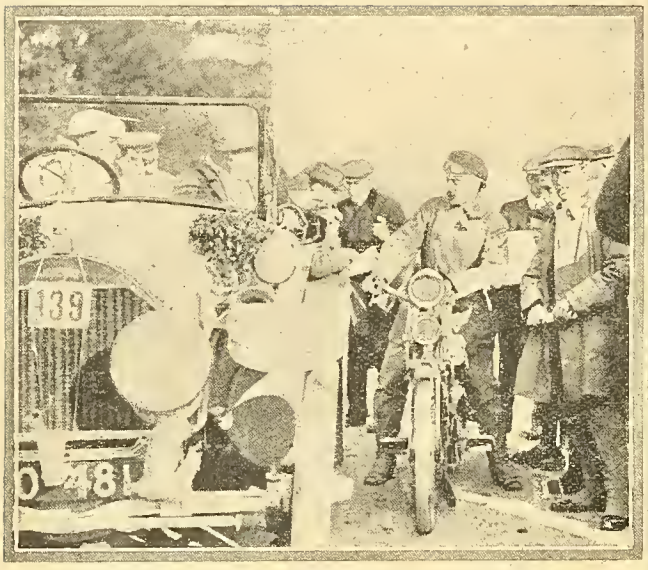
In the passenger class the fifteen successful competitors out of twenty-two starters were:

W. H. Wells (7 Indian and sc.)
G. Lee Evans (7 Indian and sc.)
A. E. Catt (3½ Triumph and sc.)
H. Gibson (3½ Bradbury and sc.)
G. Wray (3½ Bradbury and sc.)
J. Godsall (6-7 Bat and sc.)
C. Percival (6 Zenith and sc.)
J. Chater-Lea (8 Chater-Lea and sc.)
W. E. Haines (8 Bat and sc.)
•H. S. Morgan (8 Morgan roundabout).
T. Frank (7 G.O.K. and sc.)
•J. W. C. Steinberg (3½ Scott and sc.)
•P. Smith (5-6 Clyno and sc.)
T. G. Proctor (7 Indian and sc.)
•E. B. Ware (8 Chater-Lea and sc.)

• Entered for special return journey gold medal

Of the retirements in the passenger class, L. Vedy (5 h.p. Salway and sidecar) retired near Otterburn. J. L.

London-Edinburgh Run.



H. G. Bell (4-cyl. F.N.) the first competitor to start and first to finish. Chas. Jarrott's Napier car is on the left.

An amusing incident at the last check. A wee lassie presented De Rosier with a small American flag, which he folded carefully. The crowd afterwards gave him three cheers.

Barratt (7 h.p. Chater-Lea-Peugeot) and A. R. J. Abbott (8 h.p. Matchless), retired for reasons not yet obtainable. W. Chater-Lea (Chater-Lea quadcar) retired at Newark. His engine pulled badly, and he eventually traced the trouble to a choked petrol pipe, but not till too late to continue the journey. C. F. Halsall (5·6 h.p. Clyno) and H. Williamson (7 h.p. Rex sidetté), reasons not known. Halsall was last seen at Jedburgh and Williamson at York. Subject to confirmation, all who arrived at Edinburgh, with the exception of W. Hornsley (4 h.p. Cheviot), qualify for gold medals. Hornsley was one and a half minutes late.

Of 126 motor cyclists who started 111 arrived at Edinburgh, 96 riding motor bicycles and 15 motor bicycles and sidecars or runabouts.

Sunday was spent quietly in Edinburgh. Only the "cup" men were not allowed to have access to their machines.

The Return Journey.

The homeward journey from Edinburgh on Monday took place in weather quite as splendid as it had been on the way North. The first man to be despatched was Hill (Rudge), who had entered for the challenge cup. He was sent off by Bidlake at 12.30 a.m. It was not very cold at the start, but over the mountains it was decidedly chilly and inclined to be misty. The break of dawn on the Cheviots was particularly beautiful. All the way up to London the day was hot, and the dust at times was very trying. The men were timed in at Barnet by the indefatigable Bidlake, and numerous spectators, kept in order by W. Cooper and several policemen, welcomed their arrival. The following were timed in: E. Pond (3½ h.p. Rudge) arrived 9m. 36s. ahead of schedule; J. W. Woodhouse (3½ h.p. Mead) came in to time. The rest arrived in the following order:

C. Bailey (3½ Rudge).
B. A. Hill (3½ Rudge).
W. B. Gibb (2¾ Douglas).
A. V. Sumner (3½ Ariel).
E. Clark (2¾ Douglas).
P. Shaw (3½ P. and M.)
G. L. Fletcher (2¾ Douglas).
H. A. Coocer (3½ Bradbury).
R Ellis
F. W. Applebee (3¼ N.S.U.)
E. Kickham (2¾ Douglas).
S. Webb (3½ Bradbury).
C. S. Burney (3½ Rudge).
G. Brough (3½ Brough).
G. A. Reed (3¾ Scott).
J. P. Le Grand (5 Rex).
J. S. Holroyd (2¾ Motosacoche).
W. H. Elce (3½ Rudge).
G. T. Gray (3½ Rudge).
R. C. Owen Wells (3½ Bradbury).
G. E. Purchase (3½ Triumph), who punctured just on coming in.
F. White (7 Rex).
F. E. Pither (5 Rex).
W. A. Jacobs (5 Rex).
R. Croucher (3½ Kerry).
J. R. Haswell (3½ Triumph).
A. J. Sproston (3½ Rudge).
W. F. Guiver (3½ Kerry).
F. C. North (3½ Ariel), who had five punctures
W. C. Henry (3 Wanderer).
G. Goswell (3½ Ariel).
J. L. Love (3½ Triumph).
R. G Munday (3½ Triumph).

A. Webster (2½ h.p. Hobart) had engine trouble nine miles from the finish, and was towed in by Sproston. V. Deacock (4 h.p. N.L.G.) arrived late through having run out of petrol.

C. E. Lovett (3½ h.p. Bat) broke his frame at Buckden, and Karslake (4 h.p. Dreadnought) also broke his frame. Another unfortunate was England (2 h.p. M.R.), who stripped his timing gear. Robbins (3½ h.p. Humber) had not arrived at midnight. Mundy arrived late through stopping to help Slatter, who fell asleep and collided with a cart. He was injured and taken to Doncaster Hospital. Greaves met with a similar fate, so it was stated, at Bawtry, and was reported rather badly hurt.

In the sidecar class Ware arrived with his damaged machine spliced up with wood where broken. He skidded badly at a corner on the Cheviots, and hurt his finger. His splendid pluck in getting through is worthy of special mention. T. G Proctor (7 h.p. Indian) and F. Smith (6 h.p. Clyno) finished to time.

G. E. Stanley (3½ h.p. Singer) winner of the long race at the Brooklands Whit-Monday meeting.

HOLIDAY RACING AT BROOKLANDS.

Scene in the paddock prior to the start of the first motor cycle race.

ON Whit-Monday the famous track was thronged with spectators, who, in the glorious sunshine, had much to interest and entertain them. As usual, two motor cycle races figured on the programme. The first was wn as the Second Short Motor Cycle Race, a handicap, the trant of the winner to receive 8 sovereigns or cup at option. ond 4 sovereigns or cup, and third 2 sovereigns or cup; all classes of motor bicycles; distance, about 5¾ miles. e machines passed the fork once, and then entered the aight, completing the race at the long finishing line. On ssing the fork for the first time, Weatherilt had already ablished a lead; after him came Stanley, Dr. Gaskell, anks, and McNab in close order, followed by Baker-White, war, Luce, Johnson, Bell, Godfrey, Steeves, and Pullin, ose engine was missing fire. Weatherilt won by a arter of a mile. The finishing order was as follows:

Rider and machine.	Bore and stroke.	Handicap. c.c.	M. S.
P. Weatherilt (1-cyl. Zenith-Gradua)	76 ×65.5	297	1 46
O. C. Godfrey (2 Indian) ...	82.5×93	994	scr.
F. P. Johnson (2 Matchless) ..	85 ×58	658	38
H. Shanks, jun. (1 Kingfisher)	85 ×60	340	1 30
A. J. Luce (2 Bat)	85 ×65	740	48
F. A. McNab (1 Trump-Jap)	90 ×77.5	492	1 8
A. Baker-White (1 Trump-Jap)	85.5×85	488	1 14
V. J. Surridge (1 Rudge) ...	85 ×88	499	4
G. E. Stanley (1 Singer) ...	85 ×88	499	1 0
D. F. Steeves (1 Premier) ...	85 ×88	499	1 0

ell (M.R.) and Butler (Dot-Jap, P. and M. gear) were in ble at the start, the former losing his belt. Weatherilt's ndid speed, 55.90 m.p.h., equalled that of Barnes riding h.p. Zenith on the occasion of one of the earlier B.A.R.C. tings this year. Considering his handicap, Godfrey did vellously well to get second place.

The Second Race.

he second event was the Long Motor Cycle Race (a dicap), and was run under the same conditions and for same awards as the first. The machines passed the fork e and then entered the straight, ending the race at the long finishing line. The distance was about 8½ miles. Both this and the previous race were started at the fork. Godfrey's machine fired rather badly at the start, or he would probably have won. Weatherilt, according to the rules, was handicapped on his speed in the first race.

Ball and then Weatherilt passed the fork for the first time 35s. after Godfrey had started, and were followed by Dr. Gaskell, Griffiths, Baker White, McNab, Stanley, Surridge, Johnson, Luce, Godfrey, Shanks, Pullin (apparently in trouble), and Butler (who stopped). The next time past the fork Weatherilt was leading, followed by Stanley, McNab, Baker-White, Surridge, Johnson, Griffiths, Godfrey, Luce, Shanks, and Pullin. The finish was a close one, the order being as follows:

	Rider and machine.	Bore and stroke.	Handicap. c.c.	M. S.
1.	G. E. Stanley (1-cyl. Singer)	85 ×88	499	1 30
2.	O. C. Godfrey (2 Indian)	82.5×93	994	scr.
3.	P. Weatherilt (1 Zenith-Gradua)	76 ×65.5	297	2 15
4.	V. J. Surridge (1 Rudge) ...	85 ×88	499	1 6
5.	F. A. McNab (1 Trump-Jap)	90 ×77.5	492	1 42
6.	A. Baker-White (1 Trump-Jap)	85.5×85	488	1 51
7.	F. P. Johnson (2 Matchless) ...	85 ×58	658	57
8.	R. J. Bell (2 M.R.)	62 ×85	257	4 15
9.	G. Griffith (1 Zenith-Gradua)	85.5×85	297	2 3
10.	H. Shanks, jun. (1 Kingfisher)	85 ×60	340	2 15
11.	C. G. Pullin (2 J.A.P.) ...	85 ×85	964	39

There was some excellent flying by Latham (who narrowly escaped a serious accident), Gilmour, and others.

The entries for the motor cycle races were necessarily somewhat meagre owing to the number of events held at Whitsun.

THE TOURIST TROPHY RACES.

Messrs. J. R. Nisbet and F. Straight visited the Isle of Man last week-end and fixed upon the Sefton Hotel, Douglas, as the A.C.U. official quarters.

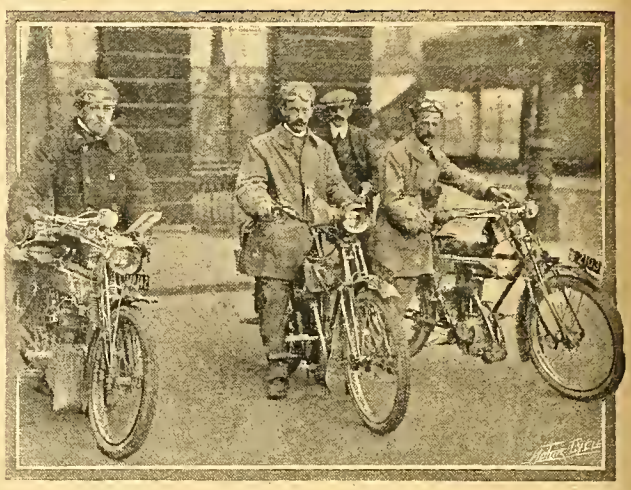
By special arrangement practising is to start on Thursday next, the 15th inst.

For the two races there are over a hundred entries.

THE COAST RIDE.

AS we have already announced in these pages, F. Dover, a member of the Sheffield and Hallamshire M.C.C., is undertaking a long-distance ride all round the coast of England, Scotland, and Wales. A representative of *The Motor Cycle* met Mr. Dover at Liverpool early in the week and sealed the machine, a etandard 3½ h.p. Premier. On Monday morning, at 5.55 a.m., the rider was started north from Lawrence's Hotel, Elliott Street. He was accompanied by J. Haslam (Zenith) and S. Sawer (Premeir), who had competed in the London-Edinburgh run, and returned to Liverpool on Sunday by road to give their clubmate a send-off and to see him on his way to Southport. Postcards have commenced to reach our offices from various towns and villages in the North of England, showing the rider's progress, by which we are able to gather that he rode north of Fleetwood on the first day. His machine is carrying about 56 lbs. of luggage in addition to ite rider.

Mr. Dover desires it to be clearly understood that he is not taking part in any race or attempting to set up any record, as has been suggested in certain quarters. Mr. Dover is an amateur rider, 47 years of age, and his coast ride is being undertaken entirely for his own pleasure. When he asked us to announce his projected ride, and receive daily postcards to check his progress, he had no idea his project would be copied, and that he would be drawn into any sort of race or competitive riding, and he takes strong objection to such a procedure. Mr. Dover's letter concludes, "My only idea is to have an enjoyable holiday, and if I can at the same time demonstrate the reliability of the modern motor cycle I shall be satisfied. I care nothing for high speeds or racing."



START OF THE COAST RIDE.

Fred Dover (3½ h.p. Premier) on right, about to start from Liverpool on his 4,500 miles coast ride. The two other Sheffield riders—J. Haslam (3½ h.p. Zenith,) and S. Sawer (3½ h.p. Premier)—accompanied Dover to Southport, after winning London-Edinburgh medals, and afterwards riding to Liverpool.

TOURIST TROPHY ENTRIES.

The following additional entries have been received for the Senior and Junior Tourist Trophy Races since our last issue was published:

Senior.

Rex Motor Mfg. Co. (two single-cylinders)
J. Lang (4 h.p. Matchless)
W. H. Elce (3½ h.p. Rudge)
H. Reed (Dot)
Sir Angus Sanderson and Co. (4 h.p. Matchless)
H. Mason (4 h.p. Matchless)
J. A. Prendergast (3½ h.p. Rudge)
F. W. Barnes (3½ h.p. Zenith)
P. Weatherilt (3½ h.p. Zenith)
Gasert (N.S.U. single-cylinder)
Bolt (N.S.U. single-cylinder)
Drechsler (N.S.U. single-cylinder)
O. C. Godfrey (4½ h.p. Indian)
F. A. Applebee (5 h.p. Scott)
J. Adamson (3½ h.p. Triumph)
J. Gibson (3½ h.p. Rudge)
Q. Smith (3½ h.p. Triumph)
H. R. Fowler (3½ h.p. Ariel)
W. Joepson (4 h.p. Matchless)
H. A. Collier (4 h.p. Matchless)
W. Houghton (3½ h.p. Rudge)
E. G. Garrard (4 h.p. Blumfield lightweight)
Premier Cycle Co., Ltd. (two 3½ h.p. single-cylinders)
Rudge-Whitworth, Ltd. (3½ h.p. Rudge)
V. J. Surridge (3½ h.p. Rudge)
H. Martin (3½ h.p. Singer)
G. E. Stanley (3½ h.p. Singer)
T. L. Rankin (3½ h.p. Singer)
Fred Mackay (3½ h.p. Singer)
S. Percy Johnson (4 h.p. Matchless)
W. Stanhope Spencer (3½ h.p. Rudge)
J. L. Norton (3½ h.p. Norton)
T. Brewster (3½ h.p. Norton)
S. T. Tessier (4 h.p. Bat)
W. E. Grange (3½ h.p. Bradbury)
V. Clews (3½ h.p. Calthorpe)
J. H. Slaughter (3½ h.p. L.M.C.)
S. C. Perryman (3½ h.p. Ariel)
A. B. Sumner (3½ h.p. Ariel)
A. J. Sproston (3½ h.p. Rudge)

Junior.

F. Sain (Alcyon single-cylinder)
M. Canale (Alcyon single-cylinder)
J. Garbero (Alcyon single-cylinder)
H. G. Dixon (2¾ h.p. New Hudson)
H. Rem Fowler (2¾ h.p. New Hudson)
Hugh Gibson (2¾ h.p. New Hudson)
D. Brown (Humber lightweight)
Rex Motor Mfg. Co. (2¾ h.p. twin)
H. J. Cox (2¾ h.p. Forward)
P. J. Evans (Humber lightweight)
F. W. Barnes (2¾ h.p. Zenith)
J. Haslam (2¾ h.p. Zenith)
Drechsler (N.S.U. single-cylinder)
Heaton (N.S.U. single-cylinder)
Sirret (N.S.U. single-cylinder)
Gasert (N.S.U. twin-cylinder)
Bolt (N.S.U. twin-cylinder)
V. Wilberforce (2½ h.p. N.L.G.)
C. R. Collier (2 h.p. Matchless)
H. A. Collier (2 h.p. Matchless)
A. J. Stevens (2½ h.p. A.J.S.)
A. G. Fenn (2¾ h.p. twin Humber)
S. Wright (2¾ h.p. twin Humber)
J. D. Cooke (2½ h.p. A.J.S.)
G. E. Stanley (2½ h.p. Singer)
Geo. Wray (Humber lightweight)
W. W. Douglas (2¾ h.p. Douglas)
G. L. Fletcher (2¾ h.p. Douglas)
E. Kickham (2¾ h.p. Douglas)
H. V. Colver (2¾ h.p. Enfield)
H. Greaves (2¾ h.p. Enfield)
S. Percy Johnson (2 h.p. Humber)
H. Martin (2 h.p. Martin-Jap)
S. T. Tessier (2¾ h.p. Bat)

Adding those previously published, the total entry up to date is 69 for the Senior Race and 35 for the Junior Event. Last year 84 entries were received for the one race.

BIRMINGHAM TO LAND'S END AND BACK.

THE Birmingham M.C.C. Land's End and back run, which commenced on Saturday and ended on Monday last, was a great success. The start took place at 5.30 a.m. from a back street, as the police refused to allow the start from Victoria Square. The route, after Worcester, was the well-known End-to-end route *via* Bristol and Wellington, but Exeter was short-circuited, the riders travelling *via* Tiverton and Crediton, joining the usual route at Okehampton. The first arrivals reached Land's End about 7.30 p.m.

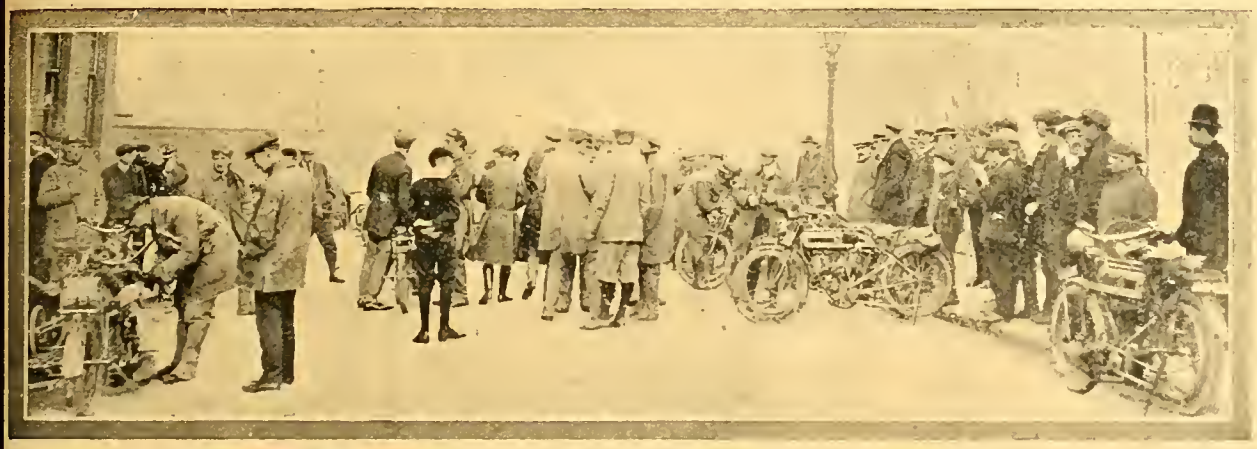
The return journey was commenced at 6 a.m. on Whit-Monday. There were thirty-seven entries, and the trial was for the Lycett Trophy, a handsome silver shield presented by the president, Mr. Edward Lycett.

The following completed the double journey in schedule time:

R. W. Duke (3½ Zenith).
S. K. Jones (3½ L.M.C.).
S. C. Perryman (3½ Ariel).
H. Cox (2¾ Forward).
S. Smith (3½ Norton).
K. Holden (3½ B.S.A.).
H. R. Fowler (3½ Ariel).
F. T. Hill (3½ Zenith)
V. Underhill (3½ Norton).
S. A. Rowlandson (3½ Rudge).
A. H. Haden (3½ New Comet).
H. Ball (3½ Triumph).
A. M. Lomax (3½ B.S.A.).
R. V. C. Brook (3½ Norton).
P. J. Evans (3½ Humber and Montgomery sidecar).
W. W. Douglas (2¾ Douglas).
H. Stevens (2½ A.J.S.).
A. J. Stevens (2½ A.J.S.).

The winner of the Lycett trophy cannot be announced until the various checkers' sheets have been examined. Photographs of the competition appear on page 579.

CLUB NEWS.



At the start of the Birmingham M.C.C. Land's End and back competition for the Lycett trophy last week-end.

Bath C.C. (Motor Secton).

The results of the reliability test which was held on the 27th ult. have now been worked out, and are : 1, R. F. G. Kelly (3½ h.p. Scott and sidecar), 4 marks lost; 2, A. F. M. Keevil (3½ h.p. Triumph), 7; 3, C. C. Wells (3½ h.p. Triumph), 18. There were only six competitors.

Cambridgeshire M.C.C.

The following are the awards in the reliability trial for those members who had not previously won a club event, held on Thursday last : 1, H. J. French (3½ h.p. Vindec), lost one mark; 2, F. T. Cox (3½ h.p. Rover), lost two marks; 3, F. Malt (2¾ h.p. De Dion), lost seven marks. Members are reminded that the president's cup will be competed for on June 15th.

Doncaster and District M.C.C.

The first of a series of competitions for the President's Cup was run off on Monday last in the form of a speed trial, which resulted as follows :

Rider and machine	Handicap.	Marks.
T. H. Dunstan (3½ Bradbury) ...	scratch ...	100
T. W. B. Durant (3½ J.A.P.) ...	1⅕s. ...	99
E. Goult (3½ Triumph)	2⅖s. ...	98

In a special class organised on the spot, T. Dunk (3½ T.T. Triumph) made the fastest time of the day.

Doncaster M.C.C. speed trial on Whit-Monday. T. H. W. Dew (3½ h.p. Minerva) crossing the finishing line.

Western District M.C. (London).

The following are the results of the reliability trial to Daventry and back for the Triumph Cup : 1, W. F. Ritchie (5 h.p. N.S.U.) non-stop run, half a second variation from schedule time; 2, E. Candwell (3½ h.p. Triumph) non-stop, five seconds variation. T. F. Stallebrass (3½ h.p. Triumph) and W. Durbin (8 h.p. Zenith) were also successful in making non-stop runs.

W. W. Douglas (2¼ h.p. Douglas) starting from Birmingham for Land's End.

Bristol B. and M.C.

There were ten starters for the 100 mile non-stop reliability trial on the 27th ult., of whom nine finished, the first three being Eli Clarke, E. Kickham, and P. Phillips, all mounted on Douglas machines.

Burnley A.C.

The winners of the reliability trial on May 28th, from Burnley to Windermere *via* Settle and back *via* Lancaster, were R. H. Winterbottom (3½ h.p. Ariel) first and H. Spencer (6 h.p. Raleighette) second.

Sarum and District M.C.C.

The above club held a hill-climbing competition on the 31st ult., on Bishopstone Hill, the competition being divided into two classes, light and heavy. H. B. C. Nash (2¾ h.p. Enfield) won the light class in 43⅘s., F. Edwards (3½ h.p. Premier) making fastest time of the day and winning the heavy class. Seventeen competitors took part. The formula results are held over until our next issue.

Club News.—

Streatham and District M.C.C.

This club proposes holding an open hill-climb for passenger machines only on the 8th or 15th of July. A hill will be selected within twenty miles south of London. Several classes will be arranged, including formulæ, speed, flexibility, etc.

Ilkley and District M.C.C.

On the 11th inst. a reliability trial will be run from Ilkley to Newark and back. The awards will be as follows: 1, the president's trophy (to be held for the year) and the club gold medal; 2, the club silver medal; 3, the club bronze medal. The first competitor is due to start from Ilkley at 8.30 a.m., and will arrive home about 7.30 p.m.

Essex M.C.

The 200 miles trial on the 24th inst. will be run as an invitation competition, and five other well-known clubs are being invited to take part in the contest. In addition to the silver cups which are being put up for individual prizes, a special prize for the best team from any of the clubs (provided six compete) is being offered.

Walthamstow M.C.

The club was well represented in the M.C.C. London to Edinburgh run, five members starting, of whom A. R. Abbott (Matchless and sidecar) returned on Sunday in time for the racing at Brooklands. The team selected for *The Motor Cycle* Cup trial on the 17th inst., is Messrs. West, Kerr, Godfrey, Applehee, sen., Applehee, jun., and A. G. Peppercorn.

Newcastle and District M.C.

The winners on formula in the several classes who took part in the annual hill-climb at Lakeside, Rothbury, on the 27th ult., were as follows:

SINGLE CYLINDERS.

1. P. F. Tolfree (T.T. Matchless).
2. F. Turvey, jun. (T.T. Triumph).
3. R. B. Smith (3½ Ariel). Fastest time.

TWIN CYLINDERS.

1. E. L. Bates (2½ N.S.U.)
2. J F. Mallett (6 Zenith).
3. L. Rosenvinge (2½ N.S.U.)
4. G. F. Oliver (8 Matchless). Fastest time.

PASSENGERS.

1. G. Turvey (3½ Zenith and sidecar).
2. D. Mackie (8 Matchless and sidecar). Fastest time.
3. P. Roberts (6 N.S.U.)

Newcastle and District M.C. hill-climb at Lakeside, Rothbury. A competitor in full flight.

Dublin and District M.C.C.

The Bank Holiday fixture of the above club took the form of a reliability trial from Dublin to Lisburn and back—180 miles. Riders were permitted to make adjustments, and secured full marks provided they were not more than one minute before or after scheduled time. Dr. Reginald White put up a handsome silver cup for the competition, as in former years, but the present trophy has to be won twice in succession or three times in all before becoming the property of the winner. The club offered silver medals to all losing less than 10 marks out of 100, and bronze medals to those losing more than 10 and less than 20, 1 mark being deducted for each minute late or early.

Competitors finishing in the reliability trial of the Bath M.C.C. The winner, R. F. G. Kelly (Scott and sidecar), is seen at the extreme left.

The start took place from Drumcondra Bridge at 9 a.m. on Monday, and of the twenty-three entrants all answered their names, and were despatched at two-minute intervals as follows

W. P. Keuaedy (5-6 F.N.)
T. Woods (3½ Premier).
H. Roche (3½ Triumph).
F. J. Walker (3½ Rudge).
T. J. Dumphy (3½ P. and M.)
R. Dumphy (3½ Triumph).
J. H. Taylor (3½ Rudge).
O. S. Baker (3½ Triumph).
E. W. Armstrong (3½ Rudge).
C. C. Williams (3½ Triumph).
J. A. Carville (3½ Triumph).
R. Myers (2 Humber).
S. Millington (2 Singer).
W. S. Coupbrough (3½ Triumph).
F. Keogh (3½ Triumph).
W. Buckley (3½ Rover).
C. E. Murphy (3½ Triumph).
R. Walsh (3½ Triumph).
J. Brown (3½ Triumph).
J. Doleman (3½ Triumph).
C. P. Kirk (3½ Triumph).
J. Healy (3½ Rudge).
W. Guilfoyle (3½ Rudge).

Kirk retired at Dundalk after valve and tyre trouble. Kennedy had magneto trouble and retired, and Roche also had to give up on upward journey. It is fairly certain that several riders completed the course with maximum marks, and consequently the result will depend on secret checks, one of which, with masterly strategy, was placed within fifteen miles of the start, where most of the men were hurrying to get a bit in hand. Twenty-one of the twenty-three competitors checked in good time at the finish.

Ayr and District M.C.C.

The second hill-climb was held on the evening of the 31st ult. at Potterhill. The fastest time, 37s., was made by Jas. Gilchrist on a 1911 Triumph. The results, based on the formula $\frac{T \times D^2N \times \sqrt{S}}{W}$, are as follow:

SINGLE CYLINDERS.

		Time.	Fig. of merit.
1.	Jas. Gilchrist (3½ Triumph) ...	37s.	7142
2.	Q. Clark (3½ Rex)	40.8s.	7210
3.	W. Allan (3½ Triumph) ...	39.4s.	7629

TWINS.

1.	W. Munro (2¾ Douglas) ...	52.2s.	10838
2.	G. Cocker (5 Rex)	37.2s.	11625
3.	A. Sommerville (5 Rex) ...	46.2s.	12895

The annual petrol consumption test takes place on the evening of June 7th, and the Coronation hill-climb has been fixed for June 21st, at Brae Avenue, off the Maybole Road, four miles from Ayr.

The Glasgow and District Motor Cycle Club and Ayr and District Motor Cycle Club have arranged an inter-club meet for June 11th at Moffat

Club News.—

Coventry and Warwickshire M.C.

The Welsh run has been postponed until the third Saturday in August, when a competition will be arranged as in former years. The amateur team chosen to represent this club in the M.C.C. Team Trial on June 17th is as follows: Geoff. Smith (3½ h.p. Triumph), G. E. Roberts (3½ h.p. Rex), J. R. Haswell (3½ h.p. Triumph), A. Elson (3½ h.p. Triumph), A. C. Riley (3½ h.p. Triumph), and C. T. Lloyd (5 h.p. Rex and sidecar). Reserves (trade)—B. Yates (Humber), S. Wright (Humber), and C. S. Burney (Rudge).

The Doncaster M.C.C. President's Cup, offered for a series of three competitions.

Exeter and District M.C.C.

It is the intention of this club to hold an open hill-climb on Saturday, July 29th.

Mersey M.C.

The paperchase to Parkgate on the 27th ult. was a successful event. The hares, Messrs. S. W. Carty and Morley, on an N.S.U. twin and sidecar, were not caught after a good ninety minutes' run.

Essex M.C.

Entries for the 200 miles reliability trial—non-stop ride and flexibility test—on Coronation Saturday, June 24th, close on June 15th. Full particulars of the course, rules, and conditions can be obtained from E. J. Bass, Bishops Stortford, Herts.

Derby and District M.C.C.

The result of the petrol consumption test of the 20th ult. were: 1. S. H. Clark (3½ h.p. Bradbury), who used 19 ounces (185 miles per gallon); 2. A. Ainsworth (3½ h.p. Rudge), who used 20½ ounces (172 miles per gallon).

Edinburgh and District M.C.

Southern and other riders should note that the hill-climb of the season will be held on Amulree Hill, Perthshire, on June 17th, and that any communications on the subject may be sent to the trials secretary *pro tem.*, T. E. B. Chalmers, 5, Summerside, Leith.

Worcestershire M.C.C.

The result of the speed-judging competition held on May 28th is as follows: 1, E. C. Heis, one minute error: 2. F. E. Hammacott, three minutes error. The 150 miles reliability trial for the President's cup will be held on July 2nd, and the committee have decided to make the event an open one to all amateur motor cyclists resident in Worcester and within a radius of ten miles, the only condition being that they become members of this club for one day only at a very nominal fee (probably one shilling).

A Motor Cycle Club for West Cumberland.

In view of the steadily increasing number of motor cyclists in West Cumberland it has been thought advisable to start a club in this district, and a meeting was held at Whitehaven on May 25th to discuss the matter. It was decided to form a local section of the Cumberland County M.C.C. rather than to form a new club, the Western section being self-governed, holding its own competitions, and electing its own committee. It will, of course, be affiliated to the R.A.C. and A.C.U. through the parent club. The subscription is 5s. and entrance fee 2s. 6d. The joint secretaries are Mr. Hilton Robinson, Gosforth, Cumberland, and Mr. H. Braithwaite, Egremont, Cumberland, to either of whom application for membership may be made.

The opening event will take place on Saturday, June 10th, and will take the form of a speed-judging contest at Piel Wyke, Bassenthwaite Lake, at 2.30 p.m.

Lancashire M.C.C.

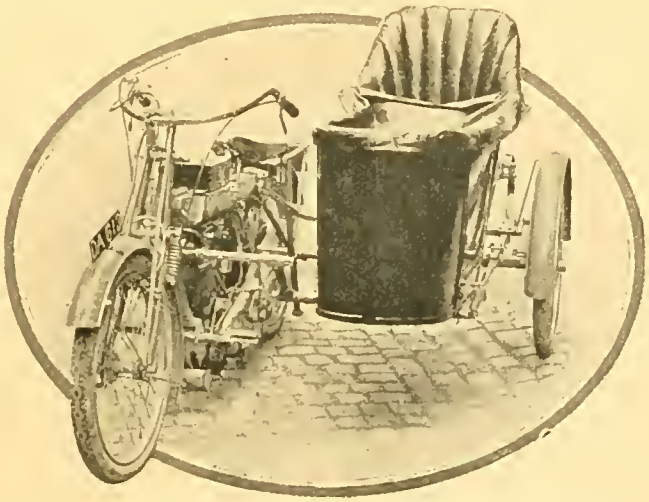
Out of a good number of entries for the petrol consumption trial on the 27th ult., over a distance of forty-six miles, only two members qualified for prizes—J. Harrison (3½ h.p. Triumph) and A. Spencer (3½ h.p. Triumph).

Bolton and District M.C.C.

There will be a two days' reliability trial next Saturday and Sunday from Bolton to Keswick and back, starting from the Crofters, Bolton, at 2 p.m., the first and second prizes being Kempshall heavy non-skid and anti-skid tyres respectively, which have been given by the Kempshall Tyre Co.

North Middlesex M.C.C.

It may interest motor cyclists resident in or near North London and unattached to any club, but who would perhaps like to join the North Middlesex M.C.C., to know that it has recently adopted a scheme by which a policy of insurance is issued exclusively to the club at a premium of 15s. per motor cycle and 22s. 6d. for a motor cycle and sidecar. The benefits of this policy are very substantial, and should strongly appeal to riders who may not yet have settled the question of insurance, nowadays one of considerable importance. Full particulars of this exclusive policy and all information concerning the club may be obtained from the hon. secretary, D. G. Blakey, Heathfield, Great North Road, Highgate, N.



A 5-6 h.p twin-cylinder two-speed chain-driven Clyno and Montgomery coach built sidecar with extra child's seat in front. This smart looking combination was recently delivered to a member of our staff.

JOHANNESBURG TO PRETORIA AND BACK RACE.

One of the chief South African motor cycling events of the year took place on the last day of April in the shape of a road race from Johannesburg to Pretoria and back, a distance of fifty-nine miles. The event was organised by the Rand Motor Cycle Club, and drew a large entry. In considering the times given below it must be remembered that the roads are bad, and the hills fairly steep. The winner, P. Flook, who averaged 49.65 m.p.h., beat the previous record for the same course by 4½m. The competitors were, of course, handicapped, and the first six finished in the following order:

		Times. Outward. M. S.	Return M. S.
1.	P. Flook (3½ Triumph) ...	39 27⅕	33 12⅘
2.	Mitzger (2½ H. and R. Precision)	49 57⅘	49 28⅕
3.	Miller (3½ Brown)	38 24⅗	39 25⅕
4.	Rieder (Matchless)	43 47⅖	36 2⅖
5.	Noter (Matchless)	41 46	41 40
6.	Moggs (Rudge)	43 45⅖	40 42⅖

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

A Route from Kettering to Sheffield.

Kindly let me know the best route from Kettering to Sheffield. —A.J.H.

Kettering, Rockingham, Oakham, Melton Mowbray, Nottingham, Mansfield, Chesterfield, and Sheffield.

Lubrication. Magneto Connections.

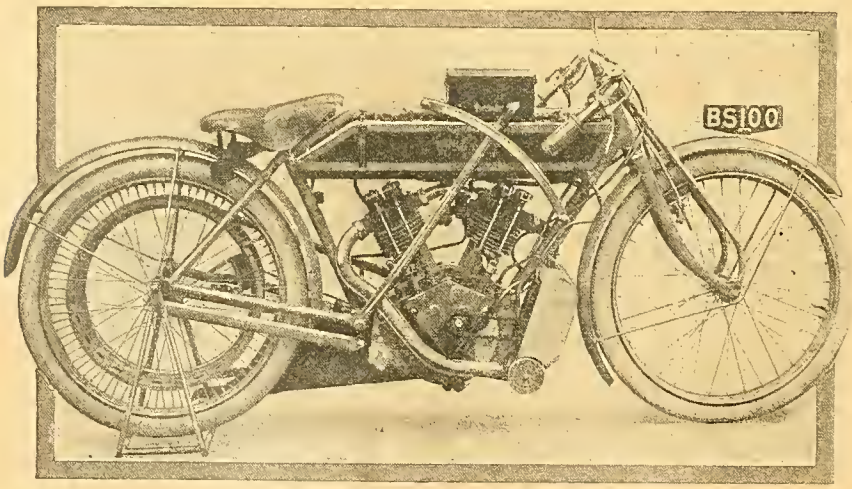
(1.) I have a 70 × 80 mm. twin-cylinder motor cycle, and having previously used a single I should be obliged if you would advise how often to lubricate with standard Chater-Lea 1in. barrel pump? (2.) On my Bosch magneto (at 45°) the figures 1 and 2 respectively are stamped on the steel guides which cause the platinum points to separate. Does that mean 1 is for the front cylinder and 2 is for the back, or the reverse?—A.W.

(1.) We should advise you to try giving about half a pumpful every three to four miles. If the engine is new, do not be sparing with oil for the first 500 miles. (2.) No. 1 refers to the cylinder which fires first. To trace this out, the best way is to take out both plugs, lay them on the cylinders, set points of contact breaker about to break, and then turn the engine over once smartly, getting someone to note at which plug the spark occurs.

Play in the Pulley-shaft Bearing.

Kindly give me your opinion on the following points *re* a 1910 free engine Triumph: (1.) What is the remedy for a slight amount of play in the pulley-shaft bearing? (2.) Is any harm being done to this bearing and shaft in riding in its present condition? (3.) As a result of a fall, belt pulley is out of truth, but belt fits well into groove and appears to run as well as ever. Will this affect the life of belt or shaft bearings? (4.) How often is it necessary to lubricate chain driving magneto? (5.) Is it necessary to remove chain cover to do this? (6.) Is there any danger of upsetting the timing gear in doing so (removing cover)?—E.M.

(1, 2, and 3.) If there is much play in the engine-shaft, it is time that the bearing was overhauled and the pulleys properly trued up. If you use the machine much longer, the play will get worse, and might strain other hearings. Our advice is for you to get the repair carried out as soon as convenient. (4.) About once every 500 miles. A small quantity of oil finds its way into the case from the engine. (5.) Yes, remove the chain cover and lubricate with graphite chain lubricant. (6.) No, there is no danger of upsetting the timing.



The new 4 h.p. Tourist Trophy Matchless-Jap, with expanding pulley gear giving ratios from 3 to 5 to 1. The movement of the back wheel takes up the slackness of the belt on the low gears. The machine is described on page 561.

Bournemouth to Dover.

Please favour me with th best ronte from Bournemouth t Dover *via* Winchelsea? Ar there any known police traps o the road?—C.G.B.

Bournemouth, Lyndhurst, Cadnam, Ron sey, Winchester, Alresford, Petersfield Midhurst, Petworth, Pulborough, Wash ington, Ashurst, Hurstpierpoint, Ditch ling, Lewes, Pevensey, Bexhill, S Leonard's, Hastings, Winchelsea, Ry Romney, Hythe, Sandgate, and Dover We have purposely taken you from th coast between Southampton and Pever sey, as this road passes many towns, much police trapped, and is not to b recommended.

Misfiring of One Cylinder in a Twin Engine.

I have ridden a single and twin, and now have a four-cylin der F.N., and on the twin found that at starting, or a slow speeds, only one cylinde fired (the back one, I think). Is this failing with all twins? Even if bot breaks of the contact points are ope ated by the same cam, does not on still get misfiring at really slow speeds —J.A.H.

The failing referred to was one commo with the older type of twin engine, an the type of magneto used before the in troduction of the staggered armatur This early type of V magneto woul allow one cylinder to start with the spar at maximum, and before any speed ha been attained by the engine it was quit possible for only one cylinder to have th spark strong enough to fire the charg As the speed increased the intensity the spark in the "weak" cylinder wa increased, and both would then fire regu larly. As the spark was advanced, at certain position of advance the spar intensity would be the same in bot cylinders, but at full advance probabl the cylinder in which the spark was firs of all weak would become stronger, bu owing to the speed at which the engin was running, the diffcrence was not appre ciable. With the new staggered arma ture the maximum point occurs at th same position in both cylinders. your twin is of recent design, a variatio in the adjustment of the two cylinder would affect the starting. For instance unequal compression, different opening of valves, unequal tension of inlet an exhaust valve springs, unequal gaps at th plugs, and unequal wear of the cam would affect the running.

Lancashire to South Devon.

Q. Can you tell me the best route from Liverpool to Torquay *viâ* South Wales? Is there a short cut over the Severn by ferry?—G.T.S.

Your best route would be, first across the ferry to Birkenhead, then through Chester, Whitchurch, Wem, Shrewsbury, Church Stretton, Ludlow, Leominster, Hereford, Monmouth, Chepstow, after which you take the train at Severn Tunnel Junction to Pilning, then proceed to Bristol (which is difficult to traverse), and go through Axbridge, Bridgwater, Taunton, Cullompton, Exeter, and Chudleigh, to Torquay.

Supposed Overheating.

Q. I purchased an A.C. Sociable in January last, but I find that the engine gets very hot on a short drive; even in three miles the engine becomes so hot I cannot bear my hand on the combustion chamber. I have had the engine down and thoroughly cleaned out three times. The silencer has been cleaned out, more air allowed to the carburetter, and the lubrication seems to be working all right, without any effect. There appears to be nothing wrong with the engine. The piston rings fit evenly, and the axle and bearings are quite free. The brakes are not tight. The jet in the carburetter is as sent out by the makers. I always drive with the spark well advanced, so I am at a loss to account for the overheating.—ANXIOUS.

The fact that you cannot bear your hand on the cylinder head proves nothing. All engines get so hot after running a minute or two that one cannot bear a hand on the cylinder. So long as the engine does not stop of its own accord through overheating and knocking, there is no cause for you to worry. We have received no genuine complaints of overheating of the A.C. As you are a novice, you should observe particularly one thing: When you take the engine down, do not put the fans back wrongly, *e.g.*, notice that the right-hand fan is on the right-hand side, and the left-hand fan on the left. Otherwise the result would be that the fans would exhaust the air from the engine instead of blowing it on to the cylinder head.

Engine Knocking.

Q. My machine is a 1909 3½ h.p. Humber, two-speed gear. (1.) The engine begins to knock when the throttle is opened more than half-way, when the machine is going about 15-18 m.p.h. It will run up to 40 m.p.h. on a level road with wind behind, but it hardly takes any extra air. The machine will not run (on high gear) with gas open less than a quarter of the way. The carburetter has just been cleaned. Before the machine would run with gas almost closed, and usually took a little more air than gas. (2.) It is very slow picking up after changing from low to high gear, and is inclined to knock in so doing, and is not completely cured by shutting off extra air. (3.) Would it be an advantage to make ordinary air adjustable?—P.M.P.

We should say that the piston and cylinder head are covered with carbon deposit and require to be cleaned out. When this is done you might write to us again and let us know how the machine is running, as this might account for the whole of the symptoms described in question 1. We presume that you take care to retard the spark at slow speeds, otherwise knocking is almost bound to occur. (2.) Are you sure that the carburetter has been re-assembled properly after cleaning? as evidently the adjustment was quite correct before. (3.) There would be no object in your further altering the carburetter, but you might fit an air adapter partially to restrict the amount of main air.

Extension Pipe to Air Inlet.

Q. Seeing in *The Motor Cycle* of May 4th that Mr. C. S. Burney had fitted an extension tube to his air inlet, by way of experiment I imitated his example, and believe I am thus able to run on less petrol and have also increased power. (1.) Will you give me your opinion as to whether the alteration would produce these effects, and from what reasons? (2.) I have recently had a little difficulty from overheating, my engine occasionally slowing down and losing power on hills, due, I think, to becoming too hot. Thinking that this might possibly be owing to insufficient passage for the exhaust gases, I took the silencer down and found that nearly all the holes were stopped up inside. After removing the stoppages there was a great improvement, and I have had no trouble so far in this direction. Does this mean that this operation has to be performed periodically, or is there some other reason for the overheating and loss of "pull"? I ride a 3 h.p. Wanderer.—J.T.B.

(1.) The effect of an extension tube when facing direction of travel is to send a forced draught of air into the carburetter, which naturally carries more petrol with it into the engine by causing a greater suction on the jet. As to whether or not this will induce economy can only be found out by careful petrol tests. Certainly, it should increase the power, and another immense advantage is that pure air, free from foreign matter, is drawn into the engine. (2.) Yes, under the circumstances, you must see that your silencer is clean from time to time, otherwise back pressure and overheating will occur.

EXPERIENCES WANTED.

Readers desirous of obtaining the experiences of others with various motor cycles or accessories must enclose a stamped addressed envelope in which the replies may be forwarded. Answers to the queries below should be addressed c/o The Editor.

"A.C.T." (Liverpool). F.R.S. back support fitted to Triumph.

"G.F.W." Chain belts compared with ordinary rubber belts for sidecar work, particularly in a hilly district.

A CHAMPION TENNIS PLAYER AND MOTOR CYCLIST.

A. F. Wilding, the lawn tennis champion, leaving after the Surrey championship, on his 6 h.p. Bat-Jap. This popular New Zealander, after carrying practically all before him at Continental tournaments, has commenced his English campaign in convincing style.

A FORMULA FOR HILL-CLIMBING.

THE author, who has spent a considerable amount of time and trouble in arriving at a good formula for hill-climbs, both for motor cycles and cars, ventures to think that this article will be of considerable interest to club officials and competitors alike.

There are three kinds of hill-climbing competitions. The first, which is an entirely sporting event, is to divide the machines into as many classes as possible, and send the riders up the hill against the watch. The second form of competition should be so arranged that it encourages real touring machines, which were comfortable to ride and reasonably light. The driver in the third style of competition who got the best out of his machine should be the winner.

Before considering any formula, it is necessary to study how the engine power is absorbed in climbing a hill.

Let H = Height of the hill in feet.
L = Length of the hill in feet.
G = Average gradient of the hill = $\frac{L}{H}$
W = Weight of machine and rider in lbs.
T = Time in seconds.
V = Speed in miles per hour.
K = Constant for hill = $\frac{L^2G}{3.73\ (45 + G)}$. See below.
A = Area of rider and machine in square feet = say 4 square feet for a motor bicycle and rider.
C = Cubic capacity of engine.

First, there is the friction of the tyre on the road. This varies according to the surface, the actual resistance being about 50 lbs. per ton on a good road. The work done in overcoming this friction will then be—

$$\frac{50\,LW}{2240} = \text{say } \frac{LW}{45} \text{ ft.-lbs.}$$

Secondly, there is the work done in lifting the rider and machine up the hill, which equals HW.

Measuring Air Resistance.

Lastly, there is the work done in forcing the machine and rider through the air. This is a problem which has never been properly solved, and is a subject which the A.C.U. might take up and settle once for all by the following method: Remove the belt from the pulleys of a motor bicycle and allow the rider to free-wheel down the test hill at Brooklands with the machine connected to the acceleration testing apparatus, the rider being, of course, in a racing position. In this way we could find the acceleration and velocity at any point. Knowing the actual gradient of the hill and allowing for the friction of the wheels on the track, it would be possible to calculate the wind resistance.

In the meantime, we will assume it to be .0032AV², which is on the high side, as we want to encourage light machines. The work done in forcing the rider through the air will then be .0032AV²L. Adding the above together, we get work done in climbing the hills equals LW/45 + HW + .0032AV²L. The horse-power expended in climbing the hill in T seconds then is—

$$\text{H.P.} = \frac{HW + .0222LW + .0128V^2L}{550T}$$

Substituting, the details of which have been left out, the h.p. is the proportional to—

$$\frac{W}{T} + \frac{L^2G}{3.73\ (45 + G)\ T^3} = \frac{W}{T} + \frac{K}{T^3}$$

where K is a constant for the hill, and equals $\frac{L^2G}{3.73\ (45 + G)}$

The efficiency is then proportional to $\frac{W}{CT} + \frac{K}{CT^3}$ or $\frac{WT^2 + K}{CT^3}$.

The above formula is more or less correct for a hill of an average gradient, but if the gradient varied to a large extent the constant K should be increased, as the mean of the cubes of two numbers is greater than the cube of the mean of the numbers. If the machines have a flying start, the constant K should be reduced a little. As the above formula is quite fair for all machines, there would be no advantage in piling on the weight.

Professor Callender's Opinion.

I have consulted Professor H. L. Callender on the subject, and he very kindly wrote me and pointed out his objections to the above formula, and on the following grounds:

First, the K/CT^3 term is too big. Second—"Since the majority of prizes go to speed simply, and the public think far more of speed than anything, the effect of speed should be discounted as far as possible by omitting this term in a formula for the 'most meritorious performance.' The speed prizes and the craze for speed are more than sufficient to encourage excessive power and lightness of weight. The W/CT formula prevents any advantage being gained by increasing power in proportion to weight, though it does not penalise it. At the same time, it would give a lightweight a sporting chance . . . if the hill were not too steep for it to get up without pedalling, or if it had a two-speed gear. The formula (W/CT) is on the whole better adapted to encourage a good all-round two-speed touring mount than if it were based purely on the most scientific rating. . . ."

In reply to the above, I should like to explain that according to my idea the K/CT^3 term has been made big on purpose—firstly, to allow for the varying speed of the machine due to the changes in gradient and the standing start; secondly, to encourage light machines.

Do the Public Acknowledge Formulæ Results?

The public will not take much notice of the formula results unless the best or fastest machine has a chance of winning, and my contention is that it is practically impossible for the machine which climbs the hill in the shortest time to win on the W/CT formula; also it is surely an advantage to increase the power of a machine without increasing the weight.

It is hard to understand why Professor Callender thinks this a disadvantage. Of course, a heavy machine is more comfortable than a light one, but it is not quite practical to make a machine heavier in order to make it more comfortable. He is surely wrong in saying that the W/CT formula does not penalise the increase of power in proportion to weight. The W/CT formula certainly gives an advantage to variably-geared machines—an undue advantage from a sporting point of view. It is quite useless going on using the W/CT formula, as very little attention is paid to the results.

Some readers might think that the suggested formula is a difficult one to work. I have therefore calculated five sample results, which are given below; the part in italics took 8¾m., or 1¾m. to each result, working with a slide rule and Barlow's tables of squares and cubes (E. and F. N. Spon, Strand, W.C.) The figures in ordinary type could, of course, be filled in previously. Two calculators should be able to keep pace with any competition in which the machines were not sent up the hill faster than one every two minutes, and provided the times were known within a few minutes of the completion of the ascent, either by electrical timing or sending up the starting times by the previous rider, as was done by the Coventry and Warwickshire M.C. in 1909 and 1910. B.

Five Sample Results.

Efficiency is proportional to $\frac{W}{CT} + \frac{K}{CT^3}$

H = Height of the hill in feet = 500.
L = Length of the hill in feet = 5,000.
G = Average gradient = $\frac{L}{H}$ = 10.
K = Constant for hill = $\frac{L^2G}{3.73\ (45 + G)}$ = 1,220,000.

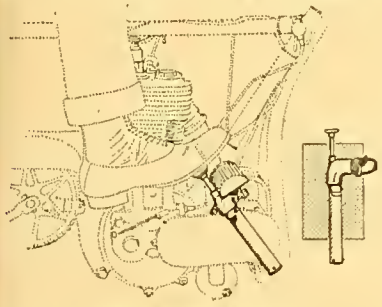
Rider and machine.	W Weight in lbs.	C Capacity in c.c.	T Time in secs.
J.J. (T———)	300	500	*125¼*
T.S. (P———)	325	480	*130⅖*
M.J.T. (B———)	310	510	*124*
S.J.D. (R———)	350	700	*107⅗*
P.Q.R. (M———)	360	656	*111⅕*

T^3	$\frac{W}{C}$	$\frac{K}{C}$	$\frac{W}{CT}$	$\frac{K}{CT^3}$	$\frac{W}{CT} + \frac{K}{CT^3}$
1962515	.600	2440	*.004795*	*.001244*	*.006039*
2217342	.677	2541	*.005195*	*.001465*	*.006660*
1906624	.608	2391	*.004965*	*.001255*	*006220*
1245767	.500	1744	*.004645*	*.001400*	*.006045*
1375037	.549	1860	*.004940*	*.001353*	*.006293*

AMONG THE ACCESSORIES.

A New Exhaust Whistle.

A novel form of exhaust whistle for motor cycles has been submitted to us by Messrs. Henry Garner, Ltd., 120-124, Alcester Road, Birmingham. The whistle, which is made entirely of brass, is provided with a plunger rod operated by the foot. This rod passes through the



Garner's exhaust whistle.

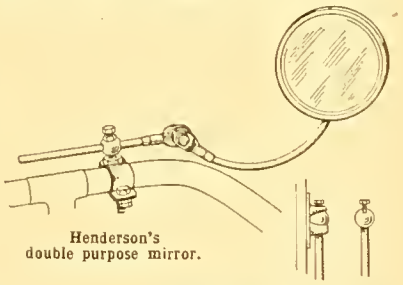
top of the whistle, and is secured to the plunger below. When operated the whistle makes a series of notes in the same way as the Garner car whistle. One of the claims made for it is that it will sound at very slow speeds, and will even blow with the exhaust valve lifter raised; it can, therefore, be used when travelling up or down hill. Means are provided for locking the whistle in any position, so that it can be placed at a suitable angle to suit the rider's foot. All that is necessary for fitting it is to drill a hole in the exhaust pipe and clamp the whistle on.

Summer Clothing.

Messrs. John Piggott, Ltd., Cheapside, E.C., have lately introduced several items of clothing, details concerning which will be of undoubted interest to our readers. Now that the weather is fine and the roads are dusty, the motor cyclist naturally turns his attention to dustproof garments. Messrs. John Piggott have carefully studied the question of providing suitable clothing for the summer time, and have placed on the market a dustproof coat of heavy twillette, which is a thoroughly serviceable garment, provides just sufficient warmth, and has the advantage of being shower-proof. A storm collar and wind cuffs are provided. It is made in two shades, drab and a greenish tint. As regards leg coverings, these are made to match in two patterns. One is of the seatless trouser type, while the others are separate leggings. Both are provided with gussets at the sides and snap-on fasteners. Holland overalls are also stocked by this well-known firm. Yet another article of clothing of which Messrs. Piggott make a speciality is a chamois leather waistcoat, which can be had with or without sleeves, and with a back extension to protect that portion of the anatomy from chill. As regards waterproof clothing, the firm have lately introduced a paramatta lined leg overall, fitted with button-holes to fit on to the trouser buttons, which serve to keep the garment in position even better than if a strap alone were depended upon. Adjustable leather straps are also provided to fasten underneath the boot. Quite a novelty is the introduction of a pair of motor cycle over-boots, which protect the foot gear from the elements and allow the rider to reach his journey's end with clean boots. They are constructed of waterproof canvas, and have a hard hand-sewn chrome leather sole.

A Double-purpose Mirror.

The subject of the annexed sketch is Henderson's handle-bar mirror and searchlight. The second name signifies that the mirror can be used to reflect the light of the lamp, in front, sideways, or at an angle. In this manner a strong reflected light is projected on to any part of the machine and to either side of the road. This is useful in repairing punctures or making adjustments at night time. The sideways light can be used to read direction posts, milestones, etc. If the mirror is used as an ordinary daylight mirror to reflect traffic which is overtaking the rider, it is fitted to the handle-bar as shown in the sketch, and by means of a swivel joint and the ball joint at the back of the mirror itself it can be set at an angle instantly. The article is British made throughout, has a bevel



Henderson's double purpose mirror.

plate glass, and is nickel-plated in first-class style. It is being placed on the market by Mr. T. E. Henderson, 73, Camden Street, North Shields.

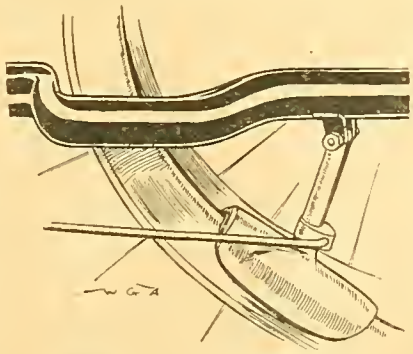
Experiences with the Amac Carburetter.

Early this year we fitted a five-jet Amac carburetter to one of our machines provided with a 3 h.p. 80 × 80 mm. engine. We are pleased to state that after a trial extending over 1,000 miles this carburetter has improved the running of the machine considerably, as well as reducing the petrol consumption to an appreciable extent. The float chamber has a spring actuated cover, and among other refinements, the extra air inlet is provided with a double thickness of gauze to filter the incoming air, so that most of the dust which would otherwise get into the engine and cause excessive carbon deposits is prevented from passing. On one occasion when the engine showed signs of stopping, the gauze was found to be quite full of dirt arrested on its way to the combustion chamber, but on cleansing the gauzes the engine resumed its normal running. It only once required any adjustment, this being due to the fact that the throttle wire had stretched slightly, and did not allow the throttle to close.

THE WULFRUNA MODELS.

THE Wulfruna Engineering Company, of Great Brickkiln Street, Wolverhampton, are putting on the market a complete range of motor cycles. These comprise three models, all of which are subject to a specification including single-cylinder vertical engines placed forward and low down, with B. and B. handle-bar controlled carburetter, U.H. or Bosch magneto placed in front of the engine and well protected by a mud shield, and driven by chain, enclosed in an aluminium dustproof case, Druid spring forks, etc.

The three models are respectively, 1½ h.p. 63 mm. × 66 mm. (205 c.c. capacity); 2¾ h.p. 76 mm. × 82 mm. (322 c.c. capacity), and 3½ h.p. 85 mm. bore × 88 mm. stroke (499 c.c. capacity). All the engines have side by side mechanically operated valves, and the two larger ones have the crankshaft carried on Hoffmann ball bearings. These engines are of the well-known Stevens make. The 1½ h.p. machine is a particularly taking and complete mount for anyone who is content to travel at a moderate speed, as excepting the dimensions of the engine it may be described as practically the same machine as the 2¾ h.p. and 3½ h.p. For its power it is quite one of the sturdiest and most roadworthy motor cycles that we have seen. The weight is 113 lbs.



Wulfruna foot operated belt rim brake.

The 3½ h.p. model is also made with a Mabon free-engine clutch, whilst a fourth model consists of the 3½ h.p. machine fitted with a Millennium two-speed gear in the back hub.

At the time of our call upon the Wulfruna Company they had just despatched a batch of 2¾ h.p. machines, and we were, therefore, only able to inspect the 1½ and 3½ h.p. models. An examination of these, however, was sufficient to show that the design and workmanship conform to a high standard, and we have no doubt that as three models allow the manufacturers to make a direct appeal to every grade of prospective motor cyclist, a good deal will be heard of Wulfruna machines in the future. We append a sketch showing the arrangement of the foot operated belt rim brake employed on all the machines. This as will be seen from the drawing, is carried out in a very neat and effective manner.

A Double-purpose Coat.

An objection to using a long coat when riding a motor cycle is the possibility of the loose tails getting in the wheel. To overcome this difficulty, and at the same time render mounting and dismounting easier, Mr. Wm. Williamson, of Warwick Avenue, Earlsdon, Coventry, has patented the coat illustrated. In using the coat each tail is

A walking and motor-cycling coat.

wrapped around the rider's legs and fastened by a button or other means about the centre of the thigh. Thus, a coat of any length may be worn without interfering with mounting, and the loose tails afford good protection for the rider's legs.

Cold Vulcanisation.

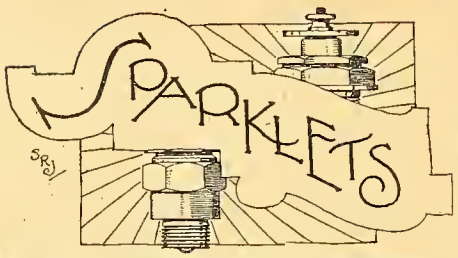
The Roberts Tyre Co., Gripwell Works, Birmingham, has for a long time specialised in tyre repairs by cold vulcanisation, a method which has no bad effect on the rubber. The firm invites correspondence from motor cyclists regarding the Vulco process, as it is called.

Simms Magnetos in the United States.

The extensive works of the Simms Magneto Co., of New York, were completed on April 16th, at Bloomfield, New Jersey. The chairman, Mr. Frederick R. Simms, has just returned from the United States, and in a letter from the company we learn that the works are capable of producing 75,000 to 80,000 magnetos a year, and of employing 1,100 hands. The first magnetos will be turned out on July 1st.

Sidecar Detachability.

Mills and Fulford, Stoney Stanton Road, Coventry, have recently made considerable additions to their premises, and it can now be said that the only part of the Millford sidecar not made in the factory is the basket work. On a recent occasion we took delivery of a sidecar, and timed the operations of detaching and attaching. The former took fifty seconds, and the latter a minute.



A Combined Petrol Tank and Number Plate.

A spare petrol tank to take the place of the front number plate has been brought out by Hitchings, Ltd., 74, Bold Street, Liverpool. A rectangular outer casing bearing the registration letters and numbers is placed in the usual position on the front mudguard, and is fitted with a container to hold a quart of motor spirit, the inner receptacle being fitted with a withdrawing handle and a screw cap. The outer case is supplied with three bolts and nuts for attaching it to the mudguard, and the price is extremely reasonable.

A Special T.T. Model Rom Tyre.

The Rom Tyre and Rubber Co., Brooke Street, Holborn, has introduced a new model tyre, specially for the use of competitors in the Tourist Trophy Race. For such a competition a fast type is needed, so the walls, though strong, are thin, thus rendering the cover resilient. Three layers of canvas at fairly wide intervals are inserted immediately under the thick rubber tread, and the object of these layers is not only to strengthen the tyre, but to deflect any puncturing agent which may try and pierce the tyre. The foundation of the cover consists of two layers of strong canvas. Three types of this model are manufactured rubber-studded with beaded edge, plain with beaded edge, and plain wired on. The tyre is made in two sizes, 2¼in. and 2½in. As an inducement to competitors in the T.T. races to make use of these tyres, the Rom Co. has offered special cash prizes.

Motor Cycle Clothing.

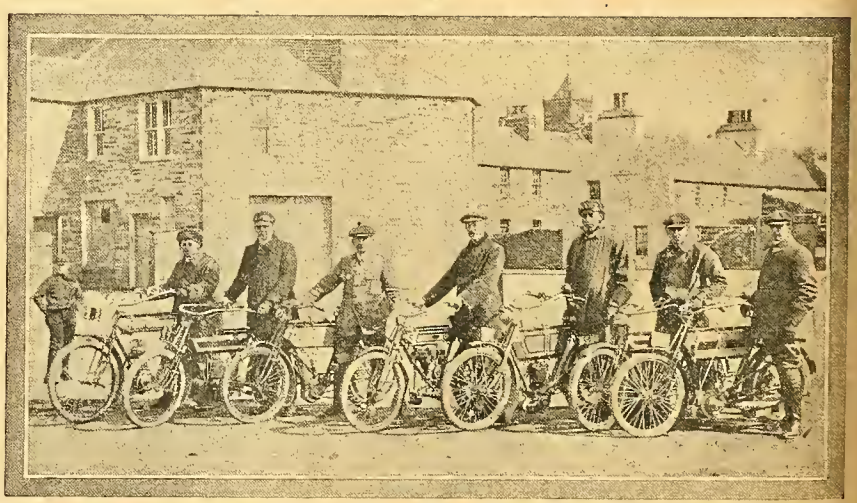
Messrs. G. Raws and Sons, the Albany, Oldhall Street, Liverpool, have sent us a selection of their motor cycle clothing for examination and report. The "Albany" jackets and overalls are guaranteed absolutely waterproof, and are made in grey green or fawn double texture cloths and in two qualities. The storm collar of the jacket has an adjustable strap which is drawn together round the neck and prevents the entrance of rain and dust. The overalls are strongly made with deep V gussets, and button up the side with patent dome fasteners. The "All Season" jacket, as its name implies, is suitable for all the year round riding. The fleece lining is detachable, being fastened by patent dome fasteners, the sleeves of the lining fitting inside the ordinary sleeves of the jacket. The last-named jacket forms the subject of the annexed illustration. These garments are well and strongly made, and most reasonably priced.

G. Raws and Sons' "All Season" jacket.

Reviews.

"North-west England." Thomas Nelson and Sons, 2s. 6d. nett. Issued under the auspices of the C.T.C., this is quite a useful publication and is well arranged. The maps of the routes and contours are placed on one side of the pages, while on the other is a description of the road. The particular district dealt with covers a great deal of the country which will be traversed in the Six Days' Trials, and should be studied by all those who desire to make a tour in the most interesting parts of Yorkshire and Lancashire.

THE FURTHEST NORTH MOTOR CYCLE GROUP.



Orkney Island motor cyclists, who now number nearly twenty. The roads are good in Orkney, but the hills are steep, and the greatest discomfort is the wind, as there are no trees or hedges to check the fury of the gale that sweeps across the broad Atlantic.

THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

The Ten Feet Line at Brooklands.

A MATTER of unusual interest with regard to racing and record breaking on Brooklands Track has again been brought to our notice, and its importance compels us to focus attention upon it at once in the interest of all concerned. When motor cycle racing and record breaking were first instituted at Brooklands this journal drew attention to the fact that the distance from the inside edge of the track at which the lap was measured for motor car racing, viz., the fifty feet line, was unsuitable for motor cycles, because record aspirants would strive to do their very best and the machines would be ridden much closer to the edge, and the distance covered would be less than that actually worked out for each lap. The question received the immediate attention of the track authorities, and for the purposes of motor cycle racing all distances are now measured from a line ten feet from the edge.

This measurement has been accepted as accurate ever since, but now there is an inclination to argue that the ten feet line is too far away from the edge, and that several expert riders hug the edge well within this limit, particularly when they are going for record and are therefore alone on the track with no other riders to pass at the bends or on the banking. If the obious ones are right, it is a serious matter, because l records created under the above mentioned conditions are inaccurate in the light of those which govern similar contests in other countries.

Before formulating any opinion one way or another considered it advisable to consult those whose duty is to regulate such matters, and we found the track thorities were inclined to regard the ten feet line as quite reasonable for the purpose, the view taken being that even the most expert cannot ride closer than ten feet to the edge when an average is taken for a whole lap, and that the majority run very much wider. At the same time there is no disposition to regard the argument lightly, but rather to investigate it with a view to arriving at a more definite decision.

Very shortly we hope to publish an article contributed by an authority on track racing and timing which will, we trust, remove all doubt as to the accuracy or otherwise of the alleged errors in distances covered. In the meantime the opinions of some of the expert riders themselves would be welcomed, as they should know quite well if they are able to ride as close to the edge at Brooklands as, say, at Canning Town. We wish it to be understood that we do not pose as alarmists, but we have been requested to bring the question to the notice of motor cyclists in the interest of the sport and as a means of removing all doubt on the subject.

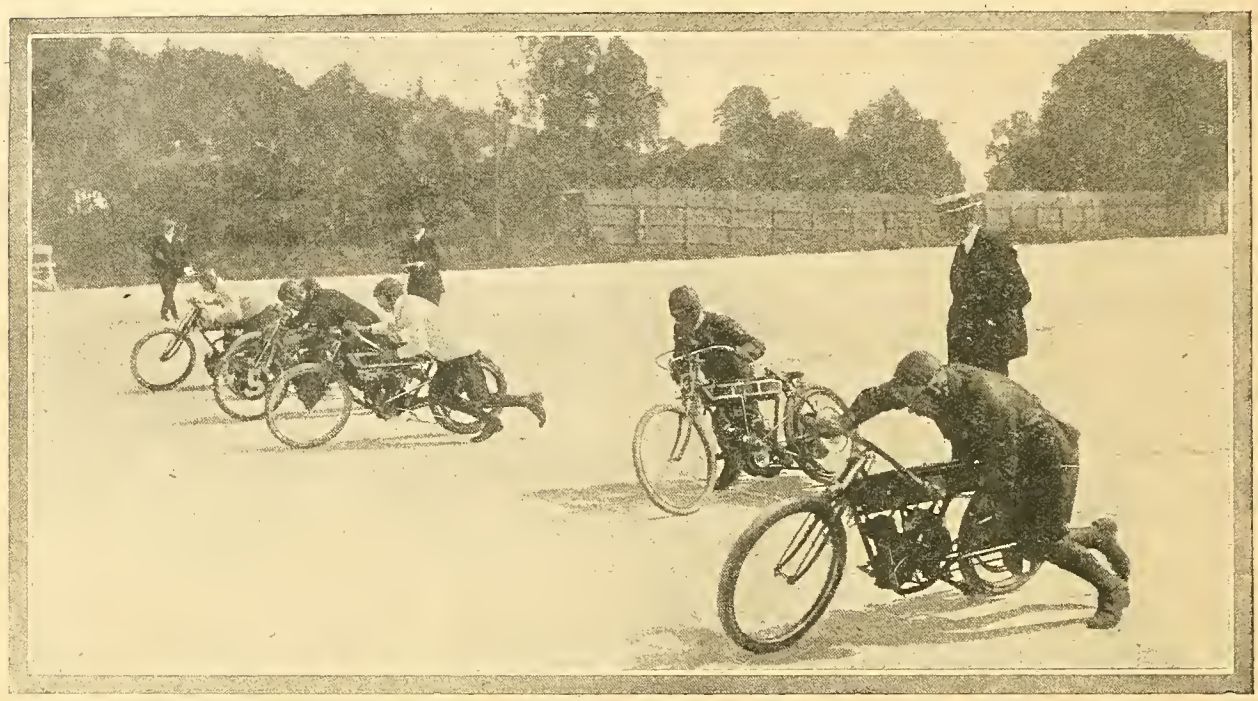
When a performance is accomplished and goes forth to the world as a record its veracity should be absolutely unquestionable, and there should not be the slightest loophole for any person or country to be able either to say afterwards that the certified distance was not actually covered or to throw a shadow of doubt upon its accuracy.

While on this subject, it may be opportune to mention that by a rough calculation that was made a few days ago we ascertained that the difference caused by a rider hugging the edge at the bends in any case would be very small indeed, but not negligible in the case of important records, as the discrepancy in a long distance would make an appreciable difference to existing record times.

Fourth 1911 Monthly Meeting of the B.M.C.R.C.

New Records by O. C. Godfrey on a 299 c.c. Zenith.

G. E. Stanley covers over Sixty Miles in an Hour on a 3½ h.p. Singer.



Start of the Hour Junior T.T. Race. The nearest competitors are: H. V. Colver (twin Enfield), G. E. Stanley (2½ h.p. Singer), and S. Wright (2¾ h.p. Humber).

ON Wednesday, the 7th inst., gloriously fine weather favoured the fourth monthly meeting of the British Motor Cycle Racing Club, and a fairly strong easterly breeze tempered the fierce rays of the sun. The meeting was not particularly well attended, and the entries were not very numerous.

The first item on the programme was the Third One Hour Junior T.T. Race, for lightweight motor cycles fitted with engines complying with the 1911 T.T. conditions. The awards were: First prize, silver cup, presented by Mr. F. A. Hardy; second prize, silver medal; third prize, bronze medal; and certificates to all who finished whose average speed was over 30 m.p.h.

In this race, O. C. Godfrey rode a Zenith for the first time, and it will be seen that he acquitted himself admirably on his new mount. All got away well except Stanley (2½ h.p. Singer), who withdrew, as his engine refused to fire.

At the end of the first lap, Weatherilt led by some distance, Martin (Martin-Jap, 79 × 59.5 mm.) was second, Colver (twin Enfield) and Godfrey followed in close order, and Wright (twin Humber) brought up the rear. In the second lap, Weatherilt (Zenith) still kept his place, Martin also remained where he was, but Godfrey lapped Colver. In the third lap Martin took the lead, and in the fourth appeared to be steadily gaining ground. Colver and Wright dropped farther behind. In the fifth lap Godfrey assumed the lead, which he never afterwards lost. Weatherilt was going badly owing to a jammed contact breaker, which caused him to dismount, but he quickly got going again. Martin retired, as he ran out of petrol owing to the drain tap of his tank shaking open. Little by little Godfrey increased his lead, and in the eighth lap was over a mile ahead. Colver, Weatherilt, and Wright (whose engine was missing fire) followed. Colver then stopped owing to a sooted plug, due apparently to over-lubrication, and Wright, though his engine appeared to be running better, had to stop, as his tyre had deflated in the eleventh lap. Godfrey, however, was nearly a lap ahead. The three survivors—Godfrey, Weatherilt, and Colver—then spread out, and the race ceased to be of any valu from a spectacular point of view, and in the eighteenth lap Colver retired. Godfrey's overhead valve Jap ran splendidly, and he completed a record distance in the hour.

Result:

1. O. C. Godfrey (1-cyl. Zenith-Gradua-Jap, 76 × 65.5 mm., 299 c.c.), 54 miles 726 yards; Class B record. [Previous best, H. V. Colver (1-cyl. Matchless, 76 × 76 mm., 345 c.c.), 52 miles 1650 yards; August 22nd, 1908.] 50 miles in 54m. 57s.; Class B record. [Previous best, C. R. Collier (1-cyl. Matchless, 76 × 76 mm., 345 c.c.), 58m. 31.4s.; Canning Town, July 13th, 1907.]
2. P. Weatherilt (1-cyl. Zenith-Gradua-Jap, 76 × 65.5 mm., 299 c.c.), 52 miles 774 yards.

H. Colver (2-cyl. Enfield, 54 × 73 mm., 334 c.c.) covered eighteen laps = 44 miles.

Third Senior One Hour Race.

The next race was the Third One Hour Senior T.T. Race. For machines conforming to T.T. conditions. First prize, silver cup, presented by the Bat Motor Manufacturing Co.; second prize, silver medal; third prize, bronze medal; and certificates to all finishing whose average was over 40 m.p.h. All got off smartly at 4.7 p.m., though Surridge was the last to get away. The first time round Stanley (Singer) was easily ahead, then Surridge (Rudge), McNab (Trump-Jap), Oldman (Zenith), Harrison-Watson (Rudge), Baker-White (Trump-Jap), Tessier (Bat-Jap), Sproston (Rudge), Holder (Blumfield), and Parker (N.L.G.-Jap), a long way behind.

Surridge was out to beat his own record, and actually led the throng from the fourth to the ninth laps when a broken valve caused him to retire. Sproston was last seen in the fourth lap, as afterwards the split pin came out of the exhaust cam spindle of his machine. In the eighth lap Oldman retired through valve trouble, and in the tenth Stanley established the lead, which he not only maintained, but steadily improved upon to the end. The order at that point was Stanley, McNab, Haswell, Baker-White, Tessier, Harrison-Watson, Parker, and Holder.

In the sixteenth lap Haswell gained second place, McNab took third, and Parker dropped his silencer, ran over it, and withdrew. In the twentieth round Stanley, who was riding magnificently, was over a lap ahead, and finished

O. C. Godfrey, who, riding a 2¾ h.p. Zenith-Gradua ter he first time, set up two new world's records for junior type engines.

twenty-four laps, nearly two laps ahead of the second man. He is the second motor cyclist to cover over sixty miles in an hour on a single-cylinder machine, and might have beaten the record but for the fact that his engine occasionally misfired, due to a sooted or oily sparking plug. Result :

1. G. E. Stanley (1-cyl. Singer, 85 × 88, 499 c.c.), 60 miles 255 yards. Outside record by 528 yards.
2. J. R. Haswell (Triumph), 57 miles 1.500 yards.
3. F. A. McNab (Trump-Jap, 493 c.c.), 57 miles 309 yards.
4. A. B. White (Trump-Jap, 488 c.c.), 53 miles 1.040 yards.
5. S. T. Tessier (Bat-Jap, 580 c.c.), 52 miles 610 yards.

Second Eliminating Handicap.

The last event on the programme was the Second Eliminating Handicap. For motor cycles of any type and fitted with any size of engine. The race was run in heats of one lap each, and the riders competed in pairs. The winners of each pair in one heat competed in the next. The handicapping for the first heat only was based on the results of a trial run. The handicapping for subsequent heats was based on the competitors' times for previous heats. First prize, gold medal; second, silver; third, bronze.

In the trial run Surridge (Rudge) romped in an easy first, followed by Luce (Bat-Jap), Baker-White (Trump-Jap), Chitty (Frays-Jap), Wilberforce (N.L.G.-Jap), and Tessier (Bat-Jap). Baker-White and Chitty started first, and White proved an easy winner. Wilberforce and Tessier then started. Tessier won—a rather close finish. Surridge and Luce then competed, and Luce came in first, as Surridge was heavily handicapped. Result :

	Rider and machine.	Bore and stroke.	c.c.
1.	S. T. Tessier (2-cyl. Bat-Jap) ...	76 ×64 ...	580
2.	A. J. Luce (2-cyl. Bat-Jap)	85 ×65 ...	738
3.	A. Baker-White (1-cyl. Trump-Jap)	85.5×85 ...	488

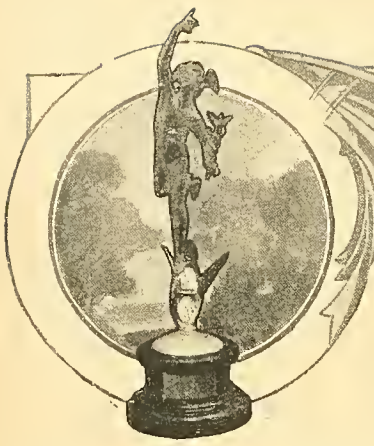
PASSENGER MACHINES IN THE M.C.C. LONDON-EDINBURGH RUN.

At the start. A. R. Abbott (8 h.p. Matchless). The passenger in the novel sidecar is W. E. Cook, winner of the first Brooklands motor cycle race. His reclining position will be noted. The rear portion was padded for a pillow.

At Doncaster. H. F. S. Morgan, who completed the double journey.

T. Frank, a medal winner, on the 6-7 h.p. G.O.K.-Jap and sidecar, at the York control.

J. Chater Lea (8 h.p. Chater Lea and sidecar), another successful competitor, at Edinburgh.



The Tourist Trophy Races

All about the Senior and Junior Events.
The Best Points of Vantage on the New Course.

THE Tourist Trophy Races of 1911 promise to be the most interesting events ever organised by the A.C.U., and especially interesting will be the first Junior T.T. Race, which is limited to machines not exceeding 340 c.c. in the twin class and 300 c.c. in the single-cylinder.

As we announced last week, practising on the island is to start to-day (Thursday), and most of the competitors are expected to be on the island this week. Those who have been fortunate enough to have witnessed the practising and to have watched the tuning up of the machines will know that the practice mornings are really quite as interesting as the actual race itself. Once again between the hours of three and seven in the morning, when most people are wasting these good hours in bed, scenes of excitement will take place, and the roars of the engines will be heard at the famous Hilberry Corner.

Peculiarities of the Four Inch Course.

The races this year take place on what is known as the four-inch course. The starting place is on the level on the back Woodlands Road near the foot of Bray Hill. Here all the fields have been reserved, and a small charge of admission will be made for this interesting space. The starting place is only about five minutes' walk from the Douglas cable trams, and can easily be approached by roads which do not require any crossing of the track.

The first dangerous corner is the Quarter Bridge, inside half a mile from the start, and it is expected that crowds of people will be at this point of vantage. From here the course runs level for about half a mile until Braddan Church (the scene of the open-air services, which are attended on Sundays by thousands of visitors) is reached.

A gentle rise for about one mile brings the competitors to the Union Mills, and then an up and down road leads through Crosby to Ballacraine, famous also for its bad corner. A winding road for the next three miles runs to Glen Helen, where some competitors have made their headquarters.

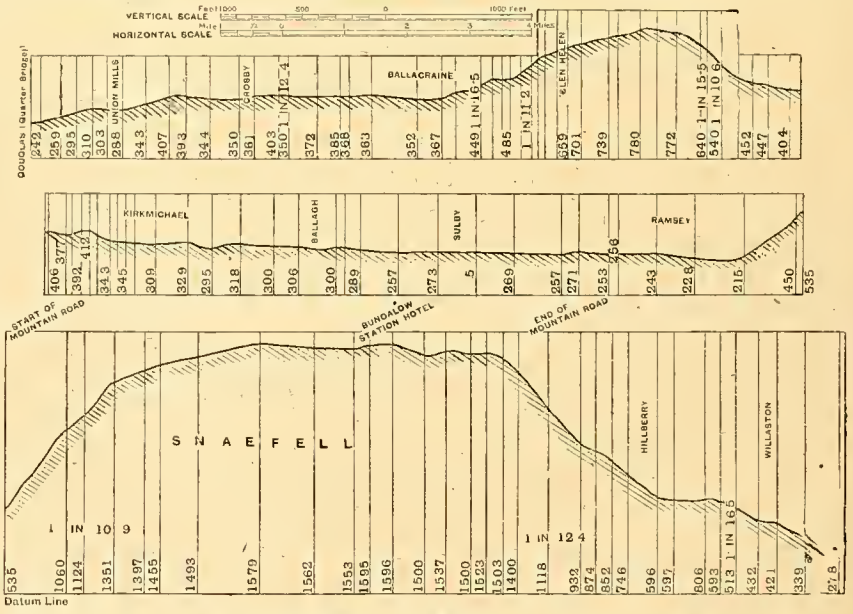
Creg Willey—the First Hill Test.

The famous Creg Willey's Hill will be the first test for the engines, and those who have competed in other T.T. Races on the island have reason to know this hill well, and especially during the last two laps.

From the top of Creg Willey's Hill to Kirk Michael is nearly all the way down hill, and it is expected that the speed here will be very fast. From Kirk Michael the course goes through Bishop's Court, Ballaugh, and Sulby, to the famous Sulby Bridge Corner, the place where many a car in the old days has failed to get round, landing itself and its unfortunate driver into the river bed below. Four miles further Ramsey is reached, the most northern town on the island, and then the real difficulties for the engines commence.

The Four Miles Mountain Climb.

Turning sharply to the right at the entrance to Ramsey, a rough road takes you to Cruickshank's Corner, and from there on to the famous Hairpin Corner—the start of the mountain road. For the next three miles the hill is very steep until the foot



CONTOUR SECTIONS OF THE SNAEFELL COURSE of 37½ miles, adopted for the 1911 T.T. Races.

The Tourist Trophy Races.—

of Snaefell Mountain is reached, and then the course will be very fast, as practically all the way to Douglas is down hill.

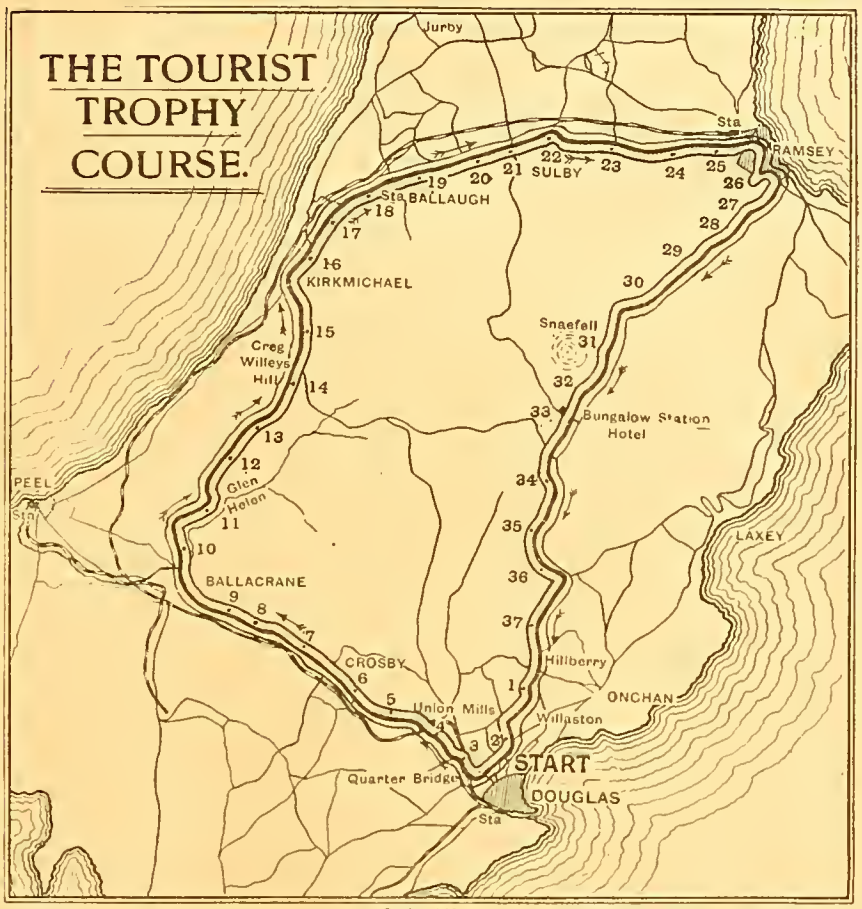
There are several very nasty corners which will require great care to be exercised on the part of the riders. There is the Kepple Gate Corner turning to the left, the Craig-naa-baa Corner turning sharply to the right, Hilberry, the fastest corner on the course turning sharply to the right, Edge's Hedge (called after poor Cecil Edge) turning to the left, and Watterson's Corner turning to the left, and Bray Hill Corner turning to the right. Down Bray Hill the machines will travel very fast, and the start is again reached.

The course is tricky, is one that will require to be well studied, and it is a course admirably suited for the purposes of the race.

How to See the Race.

The total distance is 37 miles 4 furlongs, and it is expected that it will be done considerably under fifty minutes. One machine, it is said, has already done it in forty-five minutes, and to accomplish such a speed on such a course is something words fail to describe.

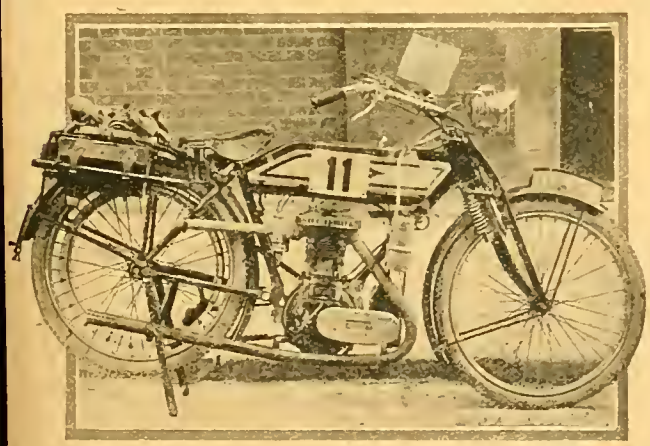
The chief point to see the race, of course, will be at the club enclosure near Douglas, where all the reports from the various controls and telephone boxes will be received and announced. Some people will want to see the riders on corners, such as at Quarter Bridge, Ballacraine, Kirk Michael, and Sulby Bridge, all of which can be easily reached at any time of the day by the frequent service of trains which the railway company will be running for the races on both days.



THE NEW T.T. COURSE AND HOW TO SEE THE RACE.

The fine lines represent rideable roads in the vicinity of the course, and it will be noticed that there are circuitous routes outside the course by which motor cyclists may journey from point to point to witness the races without crossing the actual racecourse.

The mountains can be reached by the Snaefell electric trams, and many people are expected to journey to the Bungalow. Hilberry Corner can be reached by the back Onchan Road at any time during the race, and as it is the fastest corner on the course it is expected, as has happened in past years, a large concourse of people will be there. The fine lines in the accompanying map show roads which are fit to use during the progress of the race. There are few roads within the course because of the mountains. A study of the map will show that one can travel all round outside the course by circuitous routes.



The new 3½ h.p. T.T. Ariel, four of which will be used in the T.T. race, probably with three-speed hub gears.

Rules of the Races.

The first race (the Junior T.T. Race) starts at nine o'clock on Friday, June 30th, and consists of four circuits—total distance 150 miles.

Limit engine sizes: Single-cylinders, 300 c.c.; multi-cylinders, 340 c.c. Entry fees: Manufacturers

The Tourist Trophy Races.—

P. Weatherilt astride a Junior T.T. Zenith-Gradua. Standing by the machine is F. W. Barnes, the designer, who has entered for both the junior and senior events.

or agents, ten guineas per machine; private owners, seven guineas. The prizes for Friday's race will be presented at the Palace on the same evening, it is expected by His Excellency the Lieut.-Governor.

The Senior Event.

The Senior T.T. Race takes place on the following Monday (July 3rd), and consists of five circuits—187 miles 4 furlongs.

Limit engine sizes: Single-cylinders, 500 c.c.; multi-cylinders, 585 c.c. The prizes for this race will also be presented at the Palace on the same evening by His Excellency the Lieut.-Governor.

Messrs. Nisbet and Straight, of the A.C.U., have been on the island and made arrangements for the races, and, judging from what they say, the T.T. Races of 1911 will be the most interesting motor cycle events which have ever taken place.

BIRMINGHAM TO LAND'S END AND BACK.

THERE were thirty-two starters out of a total entry of thirty-nine in this Whitsuntide competition. Eight lightweights and two passenger machines were among the number. Regular running to schedule time was to decide the winner of the Lycett trophy.

A number of competitors reached Penzance (288¾ miles) almost dead to time, although J. L. Norton and his sidecar were missing until midnight.

On Sunday all the competitors' machines were locked up in the garage so that no repairs could be done. This was an excellent plan, as it allowed everyone a perfectly free day, which they were not slow to take advantage of.

The Return Journey and Results.

Monday saw everyone astir by 4.30 a.m. Competitors were allowed half an hour to adjust their machines before being due out on the homeward journey. At six o'clock sharp the first man was away, followed by the rest at minute intervals.

The following are the official results: S. C. Perryman, the trials secretary for the competition, is the winner of the Lycett trophy and silver cup, his total time error over the five checks being only 48s. His machine was a 3½ h.p. Ariel. H. D. Jones, on a 3½ h.p. Zenith, takes second place, and carries off the A.C.U. bronze plaque and a gold medal, his total error being 1m. 12s. The rest come in the following order: W. W. Douglas (Douglas), 1m. 40s. error; H. J. Cox (2¾ h.p. Forward), 1m. 42s.; H. Ball (3½ h.p. Triumph), 2m. 18s.; H. R. Fowler (3½ h.p. Ariel), 2m. 20s.; P. J. Evans (3½ h.p. Humber), 3m. 10s.; R. Vernon C. Brook (3½ h.p. Norton), 3m. 20s.; A. M. Lomax (3½ h.p. B.S.A.), 3m. 44s.; R. W. Duke (3½ h.p. Zenith), 3m. 49s.; A. J. Stevens (2½ h.p. A.J.S.), 4m.; K. Holden (3½ h.p. B.S.A.), 4m.; S. A. Rowlandson (3½ h.p. Rudge), 4m. 17s.; H. Stevens (2½ h.p. A.J.S.), 5m. 15s.; F. T. Hill (3½ h.p. Zenith), 7m. 49s.; Seymour Smith (3½ h.p. Norton), 20m. 24s.; V. Underhill (3½ h.p. Norton), 28m. 59s. All the above qualify for gold medals.

The following are awarded bronze medals for the outward journey, which they completed within thirty-five minutes of schedule time: J. H. Slaughter (3½ h.p. L.M.C.), W. H. Egginton (6 h.p. Zenith and sidecar), P. Phillips (2¾ h.p. Douglas), H. J. Dixon (2¾ h.p. New Hudson), F. S. Whitworth (3½ h.p. Premier), A. D. Arter (3½ h.p. James), and B. Bourke (2¾ h.p. New Hudson). A. H. Haden (New Comet) qualifies for a bronze medal for completing the homeward journey within thirty-five minutes of schedule time.

F. G. Edmond, who, with Basil V. Jones, will form the Premier team in the T.T. Race. They will use 3½ h.p. single-cylinder engines with auxiliary exhaust release.

Occasional Comment

By "Ixion"

Hinged Back Mudguards.

The hinged back mudguard has been fitted for some time past by several makers with a view to facilitating tyre repairs. This fitment ought to be standard on every T.T. model, and on all other models unprovided with pedals or starting handles. To my mind it has another merit which has no concern with tyre repairs, but consists in the safety and ease and comfort with which an engine can be started on the stand by pulling up the back wheel. Many riders have lacerated their hands at sundry times by starting engines in this way and catching their knuckles against the sharp and ragged edge of a fixed guard. I hope the hinged rear guard will become a 1912 standard.

A Home-made Puncture Sealer.

A correspondent informs me that the appended recipe is commonly used by cyclists and motor cyclists in America as a puncture sealer. His experience is that it is very efficacious in sealing the ordinary small puncture, but that it exudes through a long gash, and increases the difficulties of repair. However, large gashes are rare, and he states that no matter how big the gash the exuding compound can be mopped away from the edges, so that a patch can be made to stick. The recipe is as follows: One part of liquid waterglass is mixed intimately with three parts of glycerine, and a strong acid is vigorously stirred in (concentrated H Cl is good) until the entire solution suddenly becomes almost solid like thick paste. Three additional parts of glycerine are then added (the writer further adds a little more waterglass to eliminate any free acid). The solution is then complete. From six to eight fluid ounces are sufficient for one tube, and the cost is about 10d. It should be injected through the valve tube by means of a syringe.

A Magneto Timing Notion.

I have lately been overhauling the more intimate details of the Rudge-Whitworth—a machine that truly bristles with brains, and I spotted one little gadget that particularly struck my fancy as having wide possibilities. The gear wheel on the magneto spindle has a dual mounting. The actual gear wheel may be drawn off with the fingers as soon as the cover is removed; it is only locked rigidly in the plane of rotation, for its centre is cut out in the form of an internally-toothed ring with very fine teeth, which slides on to a small star pinion mounted on the armature spindle by the ordinary taper and lock nut. In the case of the Rudge-Whitworth engine some such construction is rendered necessary by the fact that the magneto gear wheel also carries the inlet cam, and it is essential that the valve and the ignition be capable of separate timings. But what a blessing it would be if ordinary magneto timings were arranged on some similar plan.

Most engines admit of three good magneto timings, each intended for a special purpose; the biggest advance is for speed work, a medium advance for ordinary touring, and a special rather late advance for sidecar work or ascending abnormally steep hills. Now suppose the ordinary magneto gear wheel were slid on a small star pinion after the Rudge fashion. One tooth on the star would be marked, and three teeth on the internal-geared ring. Then the veriest duffer could instantaneously retime his magneto for special jobs without any worry or anxiety.

In actual practice many a rider begins to tinker with his ignition timing, loses the original timing, wastes a lot of time in the effort to recover it, and finally takes the entire machine to the nearest garage—have I not seen him?

Broken Exhaust Valves.

Exhaust valves are becoming stronger, but neither fractures nor their consequences are as yet completely obviated. I saw a broken exhaust valve recently which had gone into the cylinder of a sidecar machine and forced its way through the piston. In some engines it is impossible for this to occur, the combustion head being designed purposely to prevent it, and until a truly unbreakable valve is evolved I believe it would pay all makers to design their combustion chambers so as to trap snapped off valve heads.

Correspondents of this paper put forward the idea from time to time, but few designers trouble about it, although dozens of pistons must get broken every year from the neglect of this precaution. It may be urged that the cast iron head of a two-piece valve often "flies," *i.e.*, splits starwise, but my experience is that at least eighty per cent. of the broken valves snap clean off across the neck, and a very simple modification of cylinder design would ensure any engine so afflicted against serious damage.

BIRMINGHAM-LAND'S END AND BACK RUN.

Mr. Edward Lycett starting the competitors from Penzance on Whit Monday. L. G. Gough (Alldays), K. Holden (S.S.A.), S. A. Rowlandson (Rudge), and P. J. Evans (Humber). The results are given on page 592.

Is the Spider Quad coming to Stay?

A REPLY TO B. H. DAVIES.

I HAVE read with great interest Mr. B. H. Davies's article under this heading, the more so because it deals with a matter which has always been attractive to me, and upon which I have spent some little time and consideration. I will admit at once that Mr. B. H. Davies makes out a good case for the spider quad, but I cannot think that he has considered all the *cons* of the question, although he has assembled the *pros* in a very elegant array.

Referring to "Mr. Legion" (who, we are to imagine, is a middle-aged man of some corpulence and of sedentary habits), we cannot but assume that if he is in the habit of driving a horse and trap for pleasure, then, as individuals go, he must be tolerably well off. This is certainly a fact in favour of the quadcar, because it means that "Mr. Legion" will not be deterred from buying it if the price happens to be in excess of that of the motor cycle. On the other hand, however, the probability is that the joys of motoring in a well sprung and luxurious car are not unknown to this "Mr. Legion."

Two Seats Essential.

I gather from the article that the quad referred to by Mr. Davies is to be a single-seater. If so, I go so far as to say that this type of vehicle can never have more than a most restricted sale if it ever becomes a commercial proposition, which I very much doubt. There are strong odds that a man who runs a horse and trap has a wife also, and it is not difficult to see that "Mrs. Legion" would raise strong objections to her husband forsaking the two-seater trap for the single-seater quad. If he be not married, then there is almost as much reason for him preferring a two-seater, for few bachelors are so selfish or so misogynistical as to feel that the extra cost of a two-seater would not soon pay for itself in additional pleasure. Hence, if it is ever marketed, the spider quadcar must be available as a two-seater, and it is, in my opinion, because of this fact that it stands so little chance of coming at all, let alone coming to stay. As a two-seater it has got to be built decidedly stronger than a motor cycle; it has got to be comfortable (that is to say, the body work has got to be body work, and not merely *carrosserie à la* Windsor chair); it has got to be waterproof; it has got to be quiet; and, lastly, it has got to be of good appearance. The last point is, I think, one that will take a deal of achieving, because the buyer of such a vehicle will form his ideas of appearance naturally enough from expensive full blown cars.

Will Air-cooling Suffice?

With regard to air-cooling, I have strong doubts whether air-cooled engines of the motor cycle type can be made to do the work. Granted they are doing it now to some extent in the hands of expert drivers, but when handled by the average man it will be a matter of very great surprise if the history of the quadricycle does not repeat itself with the quadcar (if and when this type of vehicle appears), and that water cooling is adopted as the only possible expedient. Of course, directly this happens, up goes the prime cost, and if this should result every plank in the quadcar's platform must spontaneously give way. It is a vehicle that can only obtain and hold a market by force of its cheapness, utility, and reliability. If the first be gained by employing light air-cooled engines of motor cycle type, the second will be seriously impaired, and the third quality, as likely as not, completely obliterated. If so, then the quadcar has very little chance. It can never be, if comfortable and capable of going anywhere, a really fast vehicle, and hence will only appeal to the non-sporting section of the public, and this section will require absolutely unfailing reliability or it will not buy.

The Question of Appearance.

Now I should like to know what sort of an appearance these quadcars are likely to present. Being miniature reductions of full sized cars, they will never attract the eye of the ordinary layman unless they look like small cars. They have got to have large and well designed wings, and they have also got to have thoroughly comfortable bodies. They must not run any risks of looking like freaks. My own view, after making many enquiries from people who know, is that you cannot build a spider quad to look anything more than a rattle-trap affair for less than £90 or £100. Mr. Davies's figure of £70 I consider much too low. It is scarcely more than the price of a first class motor cycle and sidecar, yet it has got to include the extra cost of the framework, of the steering gear, of the seats, of the extra wheel and tyre, and certainly of an engine with a considerable reserve of power.

Any man who attempts to sell £70 quadcars, capable of doing what a quadcar must do, would be well advised to jump into one of his own machines and drive to Carey Street straight away. What Mr. Davies and a great many other people forget is that this type of vehicle makes no appeal, or very little, to the sporting element in the community. It is a vehicle, in fact, designed to suit the man who is not keen or athletic enough for a motor cycle, nor yet rich enough for a car. Unfortunately, because this individual is a dweller in Mesopotamia, he will want all the benefits of both the Tigris and the Euphrates, and so he is naturally going to expect his "betwixt-and-between" vehicle to have all the advantages of the car and all the advantages of the motor cycle, whereas it will essentially have their disadvantages.

The Second-hand Car Market.

I do not pretend to have proved that a quadcar cannot be made a commercial proposition at less than £90, but, assuming that what I have said is correct, where, I should like to know, is the second-hand car market going to come in? A great many thoroughly good two-seater cars can be bought second-hand for less than £90. They will probably be very nearly as fast as the mythical quad; they will certainly be many times more comfortable; they will certainly look better; they will be more dignified; and they will give better service in every respect; finally, they will sell after use for a better price. This fact alone is sufficient to make any manufacturer be wary of producing so problematical a vehicle as the spider quad.

CAR DESIGNER.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Insurance.

[5666.]—It may be of interest to your readers to know that in the event of an accident whilst carrying a passenger on the carrier of a motor cycle the ordinary insurance policy is nullified. ADSUM.

The London Edinburgh Run.

[5667.]—We notice in your report of the London to Edinburgh run, on page 576, C. E. Lovett (3½ h.p. Bat) is stated to have broken his frame at Buckden. We have spoken to Mr. Lovett, and he tells us that the trouble was that a part of a pair of spring forks (not of our make) which he had fitted to his machine broke. This, of course, was in no way to do with the frame, and we shall esteem it a great favour if you will make this correction in your next issue.
THE BAT MOTOR MFG. CO.

[5668.]—I feel sure that with your customary desire for accuracy you will permit me to correct a mistake which has been persistently made in connection with the lists of entrants and survivors in the recent London-Edinburgh run. The machine I rode in this event was a 2¾ h.p. Arno and not a 3½ h.p. The 2¾ h.p., although somewhat heavily laden, carried me through, and gave no trouble of any kind.
CHAS. S. LAKE.

[The M.C.C. programme gave the horse-power as 3½.—ED.]

A Bigger Douglas.

[5669.]—I was very much interested in "Colonial's" letter in the June 1st number, and I entirely agree with him in his desire for a bigger Douglas. I also own a 2¾ h.p. Douglas, and am even more pleased with it than I expected to be; in fact, I should still keep it for lighter work when I get the bigger model. Like "Colonial," however, I often feel I should like a little more reserve power, and I am all in favour of the Douglas principle.

If I might venture to make a suggestion, however, it is that the carburetter of this machine should be fitted with a removable jet. I am quite certain that Messrs. Douglas Bros. would find a very large demand for this model, which should be of 4 to 5 h.p. H. E PARKER.

Vicious Dogs.

[5670.]—I think Mr. S. H. Merrick's suggestions would, if carried out by all persons troubled by the dog nuisance, bring about a better state of affairs.

I use my machine every day over the same roads and was troubled with attacks from two or three dogs almost daily, no attempt being made by the owners or persons supposed to be in charge to control these dogs. The method I adopted has practically cured my trouble, and may be of interest to your readers. After finding the uselessness of speaking to the owners I wrote them a letter (copy of which I always keep) giving them notice of their dog's viciousness, and explaining to them their position in case of a serious accident. Such a letter is usually acknowledged, and would prove useful in case of the necessity of proceeding to extremities. I also inform the police at the same time, the owner getting a further warning from them.

This has generally proved successful in bringing the owners to a sense of their responsibilty. Although one has a great prejudice against appearing in a court, yet in a really bad case this prejudice should be put aside and steps taken against the owner in the interests of humanity.
FRANK COMER.

[5671.]—Mr. Merrick, the writer of letter No. 5638, would do well to note that on sending to Mr. L. C. Wilks, Gordon House, Woodford Road, South Woodford, Essex, the description of the dog, with the name and address of the owner, that gentleman will, on behalf of the National Cyclists' Union, inform the owner that the dog is entered upon a list of vicious dogs whose owners have been notified of their dogs' propensities. Mr. Merrick must expect abuse and insolence from the said owners—like dog, like master—and may perhaps be threatened with being shot, as I was lately, but if he can procure the presence of a policeman to insist upon the name of the owner, he will be rewarded by having spread a little light upon a dense intelligence.

I fully intend, on the first opportunity, to take a test case before the local magistrates and ask for an order to be made to keep the animal under proper control. EL 862.

Is the Spider Quad Coming to Stay?

[5672.]—I see that in the opinion of your correspondent, Dr. Patterson, three-wheelers, "except for good roads or town work, are dead as mutton." My experience does not agree with his assertion. No doubt this may be true of the old-fashioned tricar with its high centre of gravity and bad springing, but it is unfair to condemn in this offhand manner the modern tricar.

I have just returned from the London-Edinburgh run, in which I drove a tricar (a Morgan Runabout) from London to Edinburgh and back, on top gear, without the slightest hitch, except one puncture. I did equally well on the same tricar in the London-Exeter run at Christmas. I do not wish to single out my tricar; the A.C. two-seater is also acknowledged to be a very successful tricar.

I doubt whether the spider quad (if by this is meant a motor cycle on four wheels) will prove attractive. The rider who discards his motor bicycle requires comfort—a comfortable seat, good mud-wings, and a more or less enclosed body. It has as yet to be proved that in any quadricycle "a differential is unnecessary." A differential is essential unless the machine is belt-driven. But no belt-driven quadricycle has as yet proved its reliability in a public trial; none even attempted this year's London-Edinburgh or the London Exeter runs.
H. F. S. MORGAN.

Racing Machines and Change-speed Gears.

[5673.]—We have read with interest the leaderette in your last issue regarding the use of change-speed gears on racing machines. You mention that "this comparatively sudden attention to variable gears has been necessitated by the adoption of the Snaefell course." We should like to point out that we were the first to fit a two-speed gear for the T.T. race (two years ago), and were also the first to adopt water-cooling for this race. No doubt in the future still more makers will adopt our standard practice, and although "imitation is the sincerest form of flattery," we think it should not be forgotten that we were "The First."
THE SCOTT ENGINEERING CO., LTD.
FRANK PHILIPP, Secretary.

[The statements in the above letter are not in accordance with fact. Our records show that two-speed gears have been used in every Tourist Trophy Race, including the first event of 1907. The extract from our leaderette, quoted above, referred to the general body of competitors. Whereas change-speed geared machines have formed a very small minority in previous years, this year they may predominate.—ED.]

Hill-climbing Extraordinary.

[5674.]—In *The Motor Cycle* of June 1st, I noticed a letter from Mr. P. W. Owen, saying that he rode his 6 h.p. Zenith up the Wrekin on 25th May, and that he thought there would be many who would hardly believe such a climb could be accomplished. I decided to have a try on Saturday, 3rd June, on my 1910 free-engine Triumph. I rode to the foot of the hill and stopped for about five minutes to remove my overalls and lower the gear to 6½ to 1. I stopped five times on the way up; once to shorten the belt, once to replace a broken belt-fastener, twice through hitting boulders, and once to lift the machine over a fallen pine tree, starting each time on the clutch without any difficulty. The reason I was stopped by the boulders was because my back wheel bounced about 2ft. off the ground (so one witness said), and by the time it had descended again the machine had lost momentum which caused the engine to stop.

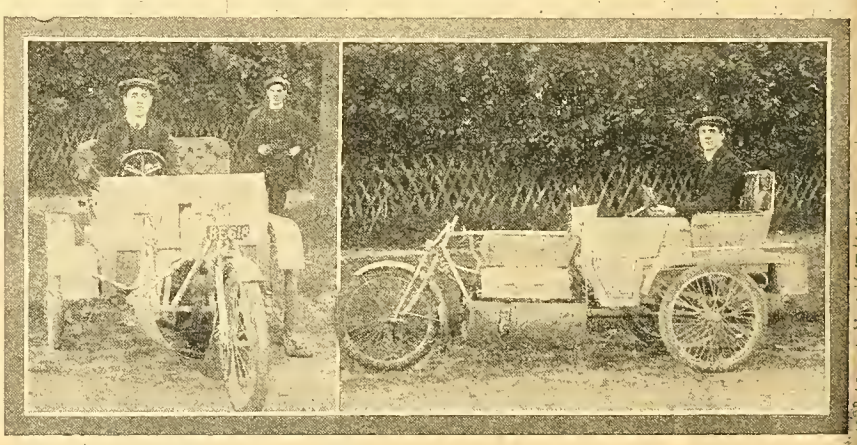
On the steepest parts my speedometer was pointing to 15 m.p.h. I got some people at the top to sign their names to a statement saying that they had witnessed my arrival.

I did not reconnoitre or lay a paper trial, but rode straight for the top as hard as I could. Mr. Owen says he would be only too pleased to ride up again on certain conditions. I will ride up again as often as anyone will lend me a back tyre. JACK FOX.

P.S.—My machine was not stripped for the climb, but had a large bag on containing my week-end things, also tool bags full of tools and spare parts, and lamp.

Another Conversion.

[5675.]—Enclosed please find two photographs of the Rowley car. It was originally a forecar. The tank remains in the same position, but the front wheels have been done away with. Readers will note the frame has had to be extended to take the front forks, which I had to get specially made, and the steering, which is a novel idea, has taken weeks to get perfected. I covered the engine with a sheet-iron bonnet and underscreen, and it being an air-cooled engine, I arranged it so that the draught could blow right through. The back wheels and axle are off an old Locomobile steam car. I have adapted handle-starting, which is, of course, a great boon. The engine is a 5 h.p. twin, and it can get away nicely with two up. The tyres I bought second-hand, except the steel-studded band on the front wheel, and this has to encounter a lot of granite, etc., in the centre of the road. Whittle belt is the transmission, and a Mabon clutch acts as the free engine. There is just room for two persons, and it rides very comfortably. It differs from most of these converted tricars in one respect, and that is the back wheels fit ordinary and car wheel tracks, and there is not the slightest fear of overturning, as most of the weight is on them. Ignition is by coil and accumulator. Lamps are not shown, but I have the machine fully equipped with all accessories. I have also fitted an exhaust box and pipe to conduct the exhaust to the back out of the way. The weight is 5¾ cwts., and length over all 10ft. A.W.R.



The sociable runabout, originally a tricar, referred to in letter No. 5675.

Change-speed Gears and Sidecars. A Grumble.

[5676.]—I have owned several expensive two-speeders which the makers "especially recommended for sidecar use," and having experienced the most ghastly trouble with them I write this letter as a protest, in my experience, against sidecar machines as a class. My outfits cost over £110 each, and one was 8 h.p., the other 6 h.p. The gear on the one was made by a different firm from the machine, and designed for a 3½ h.p. engine, and not a very powerful one at that. I experienced every conceivable trouble with this gear, from slipping on both high and low gears to balls wearing into spindle in five hundred miles, sometimes less. My only plan was to get a complete new gear. This I did, and the same thing happened.

My next machine had a well-known foreign gear. This was fitted to a really excellent machine, and gave considerably more trouble than the other two gears combined. It needed adjustment every time I went out, and constant expensive renewals. Long journeys always ended in the railway train. It is now done after only 4,000 miles with sidecar.

I am absolutely convinced that no gear on the market will stand the strain of continual sidecar use with total weight of 7 cwts. This does not refer to certain infinitely variable gears and others which require to be pushed off. In my case they are impracticable, as it is not a very pleasant job to start out of a ferry boat on a steep hill covered with slime and seaweed if one has to push there.

And gear trouble is not all. Tyres on a sidecar machine on bad roads are as expensive as on a car, and more troublesome. Frames break if the combination is heavy and powerful. On bumpy roads, however well sprung, even with a spring frame, both driver and passenger are thrown about all over the road. Steering is difficult with the best of sidecars on highly cambered roads, and one needs an acrobat in the sidecar. Transmission is a great trouble unless one goes to chain drive, which has more against it than agents of chain-driven machines would make out.

In short, my experience is that heavy two-speeders are absolutely the height of trouble when used for really hard work in districts where the roads are at all bumpy and badly laid. I have tried for two years to find a machine good enough to be fitted to a Millford castor wheel sidecar, and have given it up in disgust. If I had a sidecar machine, I should go back to a 3½ h.p. clutch model and light rigid sidecar, which would fail on any steep hill, but be reliable.

I know this letter will cause great indignation among users of heavy sidecar machines in the level, well-laid districts of England, who use their machines once or twice a week for fifty to sixty miles a day. I do not consider that they give the machine a test. NEVER AGAIN.

Cambridge.

Starting Motor Cycle Engines.

[5677.]—Referring to the Aston Motor Accessories Co.'s criticism of my letter, the advantage of having a separate small choke tube and jet for easy starting and slow pulling is that on these occasions you want a small quantity of gas, but you want it fairly rich, and in the single jet carburetter, if you attempt to restrict the area past the jet so as to get a very small quantity of mixture, you get it so rich that it is practically useless, and to dilute it sufficiently you have to increase the quantity, which prevents you getting the dead slow running so much desired.

In all carburetters, if you almost close the throttle, you set up an extensive negative pressure in the induction pipe, and if this pressure or suction is allowed to operate on the same jet that you use for full power, when the negative pressure is far less, it is not difficult to see that you are using more

petrol when going slow than when going fast, besides getting the over-rich mixture before referred to.

The difference, say, between the Amac and my two-jet carburetter, is, as far as I can gather from an examination, that when you close the throttle or the air regulator, the suction or negative pressure in the induction pipe is pulling on the whole petrol supply. In my two-jet carburetter, when you close the throttle, the negative pressure is sucking on the small jet only, and violently spraying the petrol and giving just a rich mixture enough to be useful, and if this suction were allowed to operate on both the jets, which are the equivalent of one in the single jet variety, the results obtained would be altogether inferior.

CHARLES BINKS.

Great Reforms in the Scottish Six Days' Trial.

[5678.]—As a competitor in the Scottish trials organised by the Edinburgh Motor Cycle Club last year, in which I was successful in gaining a gold medal without the loss of a single mark, I was naturally very interested to read the article contributed by Mr. B. H. Davies on the above subject, but was more than surprised to read that it is the intention of the club to make this more of a holiday tour than a trial for machines. I am sure you will agree with me that the idea of manufacturers entering their machines for public trials is to put them to a test and not to send their riders out for a holiday. I am therefore afraid, after the publicity given in your paper of the new conditions of the trial, that the entry is likely to be still more depleted, at any rate from the trade.

I was very much hoping to see that the club was going to make the trial more severe than last year, as I think that trials where severity of conditions are imposed, the public would take far more notice of the awards gained than in any trial where the machines were run over "billiard table" surfaces.

With regard to the hill-climbing section of the competition, I note Mr. Davies states that it is proposed to have speed hill-climbs, but he does not say as to whether they are to be fast hill-climbs or slow hill-climbs. If the former, I hope he will agree with me when I say that that is not what the general public require in a machine, but the machine which will go up a hill, say, like Amulree, at a fair speed, is the machine which is more likely to appeal to the average touring rider than the machine which flies up hills like those met with in Scotland, at well over legal limit, as I have in my mind at the present time recollection of many riders in last year's trial who endeavoured to do these Scottish hills at a fast speed, with dire results to themselves and machines—a point I hope the club committee will bear in mind when drawing up the regulations. There is one good point in the new conditions, *i.e.*, working the trial from two centres, but speaking for myself personally I think the plan of having the trial from one centre only would be preferable from the matter of expense, and to a certain degree, comfort.

W. PRATT.

The Flying Kilometre Record.

[5679.]—I read with interest Mr. Dan Bradbury's letter in your issue of the 1st inst., also the one from Mr. E. H. Longley in last issue with reference to the fine performance of Mr. Bradbury on his Norton (500 c.c.), on the occasion of the Sheffield and Hallamshire M.C.C.'s flying kilometre competition on Mam Tor a few weeks ago.

The record for this distance stands to the credit of W. F. Newsome with 33.70 secs. at Brooklands, yet Mr. Bradbury's time for the flying kilometre, according to the timekeepers for the competition I have mentioned, was 31⅘s.

The next best time in the competition named was made by Mr. T. Dunk, Barnsley (36s.), and this rider is prepared to run off, for his own satisfaction, a friendly match with Mr. Bradbury at any time on terms to be mutually arranged; same machines to be used in each case, viz., 3½ h.p. Norton v. 3½ h.p. Triumph.

FRIEND SCORAH.

[5680.]—A perusal of the communication under this heading in your issue of 8th inst. leads one to the reflection that the ways of the Longley type of sportsman are indeed subtle.

He appears exceedingly attached to "suggestions," and the only inference which can be drawn from his letter by your general reader is that the S. and H. M.C.C. officials wished to be allowed to measure my engine, and that permission to do so was refused. This is entirely contrary to the facts. The committee of the S. and H. M.C.C. never expressed the slightest wish to measure my engine. So much for his innuendo.

Now for my suggestion. On May 6th my 3½ h.p. Norton beat Mr. Longley's 3½ h.p. Peugeot in the Snake hill-climb. In fact, the Norton made the fastest time of the day. It was entered as being of 490 c.c. cubical capacity. By the rules of the S. and H. M.C.C., a competitor may protest against any machine if he deposits five shillings within seven days of the completion of any competition. If Mr. Longley had any reasonable cause to suspect the dimensions of my engine, would it not have been more according to the rules of the game to have deposited his crown and settled the point for himself?

DAN BRADBURY.

(Left) Group of competitors, (right) C. Nettleton, the winner, on a 2½ h.p. New Hudson, and Day (3½ h.p. Bradbury), in the Harrogate and District M.C.C. hill-climb last Saturday.

Re Miscellaneous Advertisements.

CORONATION BANK HOLIDAY.

Owing to the above the miscellaneous advertisement columns of "The Motor Cycle" for Thursday next, the 22nd inst., close for press this (Thursday) morning.

"THE MOTOR CYCLE," 20, TUDOR ST., LONDON, E.C.

OPEN HILL-CLIMB AT SHELSLEY WALSH.

BIRMINGHAM CLUB'S SUCCESSFUL EVENT.

THE Birmingham Motor Cycle Club held its open hill-climbing competition on Saturday last in the private grounds of the Court House, Shelsley Walsh, by kind permission of Mr. M. C. H. Taylor, J.P. The club was fortunate in being able to avail itself to a large extent of the arrangements made for the Midland Automobile Club's car hill-climb which preceded the motor cycle contest. The results of the car events will be found in *The Autocar* for next Saturday.

W. Creyton (Triumph) crossing the starting line in the Shelsley Walsh hill-climb.

The Court House Grounds are situated in a most beautiful part of Worcestershire, close to the Ankerdine Hills, and the hill on which the contest was held is a severe test for any type of motor cycle on account of the double bend near the summit. The total length of the hill is 1,133 yards, and the gradient commences right at the bottom, being 1 in 11 and 12 for about 200 yards; it then alternates between 1 in 8 and 1 in 6 for over 380 yards, when the double bend is reached. The bends measure about 180 yards, and the gradient at this point is 1 in 6.82, afterwards the incline is easier, finishing with a long straight stretch of 270 yards of 1 in 10. This last section is very deceptive, as it looks almost level in comparison with the steeper parts. There were three classes—Class 1, for standard touring machines up to 560 c.c., Class 2 racing machines up to 560 c.c., and Class 3 unlimited.

The awards were: Class 1.—First on time, silver cup, presented by Mr. J. A. Holder; first on formula, silver cup, presented by Mr. Chas. Jarrott. Classes 2 and 3.—First on time, club silver cups. In addition, gold medals for first on time and on formula in all classes for members of the Birmingham M.C.C. who joined on or prior to March 31st, 1911. One of the rules was that machines over 500 c.c. were not eligible for the time prize in Class 1.

The formula used was

$$\frac{\text{H.P.} \times \text{time } 1.5}{\text{Total weight}}$$

The weighing at the foot of the hill presented an animated scene, the enclosures and adjoining lanes being packed with the motor cycles and cars of competitors and spectators. Chief interest was naturally centred at the bends, the grass banks being covered with spectators who expected to be thrilled, and were not disappointed. Several riders skidded and fell, though fortunately none were seriously hurt.

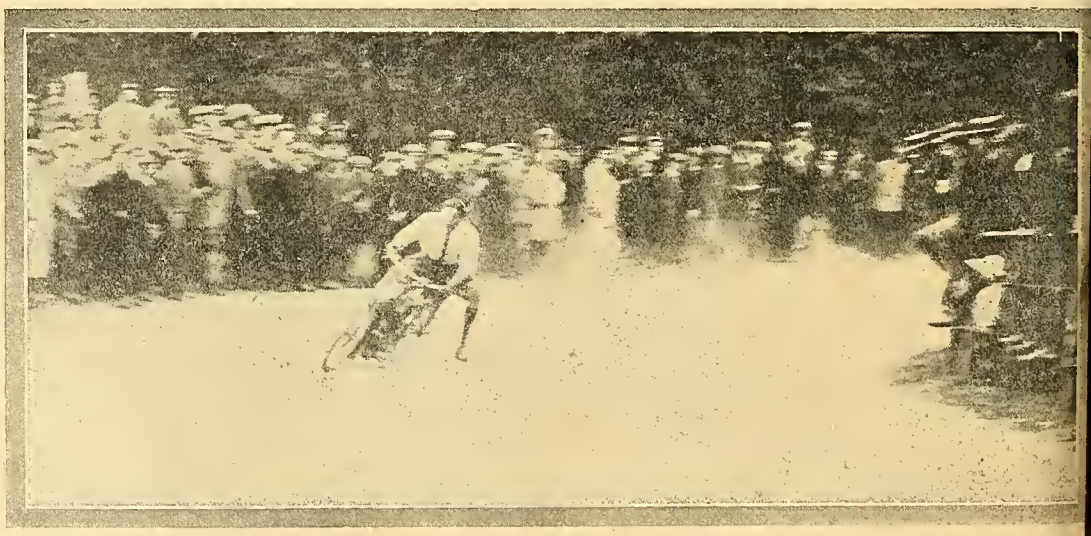
Perfect Organisation.

The arrangements for the timekeepers, calculators, etc., were very perfect, tents being erected at the top and bottom, which were in telephonic communication with each other. A warning bell also rang at the bends, indicating that a competitor was ascending. The competitors carried the starting times to the timekeeper at the top, so facilitating the working out of the formula.

An electric timing apparatus was fixed, but not used. This is the property of Mr. Morcom, of the M.A.C., who kindly explained its working. The instrument, which was at the top, is called a solenoid, and is in electrical contact with spring clips in which the ends of the starting and finishing tapes are secured by metal wedges. When the wedges are withdrawn by the riders crossing the tape the circuit is broken, thus demagnetising the solenoid which allows the iron core to fall on the top of the watch starting or stopping it according to whether the circuit is broken at the start or the finish.

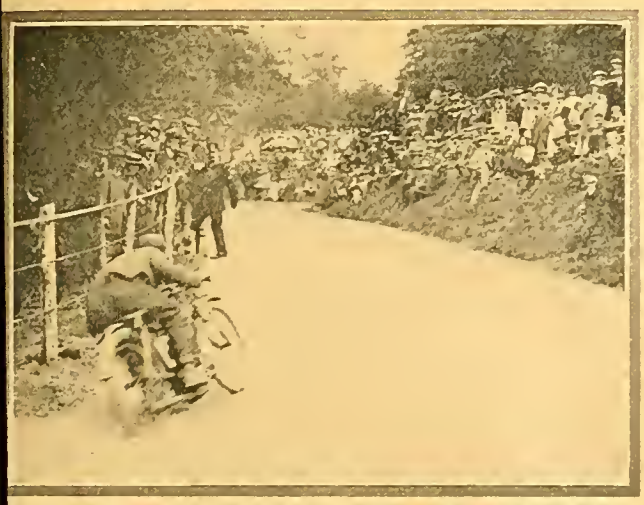
A drawback of this device is that a second competitor cannot be started until the preceding rider has finished the climb and the hands of the watch are returned to zero. This explains why it was not tried on Saturday, the large entry making it necessary to get the men away as promptly as possible.

As a matter of fact, the events were run off with remarkable promptitude. The start was advertised for 3.30 p.m., or as soon as the car competition closed. The first man in Class 1 ascended the hill at 3.50, and the whole climb was over by about 6 p.m., which is very creditable to all concerned.



J. W. Woodhouse (3½ h.p. Mead-Precision) at the commencement of his huge skid which ended in the ditch on the left.

Open Hill-climb at Shelsley Walsh.—



P. Brewster (Nerten) taking the S bend at speed. He negotiated this corner particularly well, as his machine was on the verge of a skid all the time.

ying start of about thirty yards was allowed, which was not onsidered sufficient by many competitors, but the nature of he course did not allow for a more extended run.

Incidents at the Bends.

Fourteen ascents were safely made in Class 1, including Mrs. axter (3½ h.p. Rex), before the first toss came at the corner, hen J. Woodhouse (3½ h.p. Mead-Precision) turned a com-lete somersault. He was quickly followed by J. Pollock ½ h.p. James), who skidded at the first bend. J. Slaughter ½ h.p. L.M.C.) also fell, and sustained a few abrasions, it he rode again in Class 2, as did Woodhouse and Pollock. . Brewster (3½ h.p. Norton) was another who came over the first bend.

The corners were afterwards taken with a little more care, though there were one or two minor spills in the two maining classes.

In Class 2, R. W. Duke could not get his Zenith to fire roperly just after he had passed the starting line, and he d to stop and return. S. C. Perryman (3½ h.p. Ariel) also d to return to the starting line.

In Class 3, Miss Hind (7 h.p. Rex), who with Mrs. Baxter ere the only lady competitors, made a satisfactory ascent, d, as usual, was loudly applauded. Arthur Moorhouse h.p. Indian) had the bad luck to break the rocker of one his inlet valves, so that one inlet worked automatically. is did not, however, prevent him making fastest time of e day, 55.6s., and record for the hill.

The Results.

There were twenty-six starters in Class 1, nineteen in Class and twenty-four in Class 3, and very few absentees.

STANDARD TOURING MACHINES.

CLASS 1. ON TIME.

		Secs.
1.	H. C. Newman (3½ Ivy Precision) ...	60.6
2.	B. Alan Hill (3½ Rudge)	63.6
3.	A. Clark (3½ Dene Precision)	64.8
4.	H. R. Fowler (2¾ New Hudson-Jap)	65.0
5.	A. D. Arter (3½ James)	66.2
6.	R. W. Duke (3½ Zenith-Gradua)	66.8

CLASS 1. ON FORMULA.

		Fig. of Merit.
1.	G. Patterson, jun. (2¾ New Hudson-Jap) ...	4.44
2.	H. R. Fowler (2¾ New Hudson-Jap) ...	4.86
3.	R. W. Duke (3½ Zenith-Gradua)	5.39
4.	G. Bell (2¾ New Hudson-Jap) ...	5.51
5.	C. S. Burney (3½ Rudge)	5.71
	A. Clark (3½ Dene-Precision)	5.71

RACING MACHINES.

CLASS 2. ON TIME.

		Secs.
1.	H. C. Newman (3½ Ivy Precision) ...	60.6
2.	W. G. McMinnies (3½ Triumph) ...	61.0
3.	P. J. Evans (3½ Triumph)	61.2
4.	R. H. Edwards (3½ Triumph) ...	61.8
	P. Brewster (3½ Norton)	61.8
6.	W. Creyton (3½ Triumph)	63.4

CLASS 2. ON FORMULA.

		Fig. of Merit.
1.	P. Brewster (3½ Norton)	5.33
2.	W. G. McMinnies (3½ Triumph)	5.44
3.	J. Slaughter (3½ L.M.C.)	5.60
4.	R. H. Edwards (3½ Triumph)	5.67
5.	P. J. Evans (3½ Triumph)	5.71
6.	H. C. Newman (3½ Ivy Precision) ...	5.76

CLASS 3. UNLIMITED. ON TIME.

		Secs.
1.	A. Moorhouse (7 Indian)	55.6
2.	P. Brewster (3½ Norton)	58.4
3.	J. Woodhouse (7-8 Blumfield) ...	59.8
4.	P. J. Evans (3½ Triumph)	60.2
5.	H. C. Newman (3½ Ivy Precision) ...	61.0
6.	W. G. McMinnies (3½ Triumph) ...	61.2

A. D. Arter (James) taking the last bend in the Shelsley Walsh Hill-climb.

CLASS 3. ON FORMULA.

		Fig. of Merit.
1.	P. Brewster (3½ Norton)	4.95
2.	R. W. Duke (3½ Zenith-Gradua)	5.33
3.	H. R. Fowler (2¾ New Hudson) ...	5.36
4.	W. G. McMinnies (3½ Triumph)	5.46
5.	C. S. Burney (3½ Rudge)	5.51
6.	P. J. Evans (3½ Triumph)	5.57

Moorhouse's time on the 7 h.p. Indian is record for the hill. P. Brewster's time on the Norton in Class 3 is fastest single-cylinder. The fastest car was a 58 h.p. Daimler, 63.4s.

RUDGE-WHITWORTH DINNER TO CELEBRATE SURRIDGE'S RECORD.

ON Thursday evening last, the 8th inst., Messrs. Rudge-Whitworth, Ltd., gave a dinner at the Savoy Hotel to representatives of the press and others more or less directly interested in the matter, to celebrate the ord of Mr. V. J. Surridge on a 499 c.c Rudge-Whitworth May 25th last in covering 60 miles 783 yards in the hour. . C. Vernon Pugh presided. Among other representatives the firm were Messrs. J. V. Pugh, E. M. Mayes, Victor Holroyd and J. A. Tideswell. Well-known guests included Major F. G. Lindsay Lloyd, R.E. (clerk to the course at Brooklands), T. W. Loughborough (secretary of the B.M.C.R.C.), Messrs. Massac Buist, F. T. Bidlake, J. W. G. Brooker, J. Owen, J. Harrison Watson, B. A. Hill, A. J. Sproston, J. R. Nisbet, E.M.P. Boileau (*The Motor Cycle*), and F. Straight (secretary of the A.C.U.).

Much enthusiasm was evinced in the Rudge success.

CURRENT CHAT

TIME TO LIGHT LAMPS

SPECIAL FEATURES

(GREENWICH)

June 15th	...	9.16 p.m.
,, 17th	...	9.17 p.m.
,, 19th	...	9.18 p.m.
,, 21st	...	9.18 p.m.

T.T. Practising.

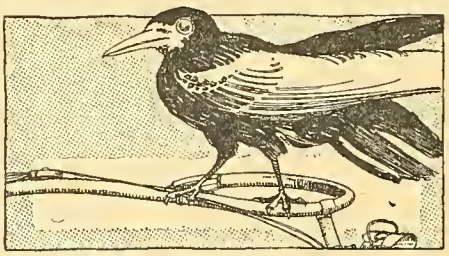
Practising for the Tourist Trophy Races was to commence this (Thursday) morning in the Isle of Man, but it was not expected that many competitors would avail themselves of the opportunity offered until next week.

How to See the T.T. Races.

Visitors to the Isle of Man for the T.T. Race will find the article at the beginning of this issue of special interest. On the map of the new T.T. course, all roads are plainly shown by which an onlooker may vary his position without inconveniencing the competitors by trespassing on the course. The article gives an idea of the best spots from which to witness the race for those in search of thrills.

Dutch Motor Cyclists' Visit.

At least seven members of the Dutch Motor Cycle Club will take part in the tour across England in connection with the visit to the Isle of Man for the Tourist Trophy Races. Several others are probable starters. In a letter to us, Mr. A. Citroen, the hon. sec., says that he sincerely hopes that English motor cyclists will set an example and visit Holland with a big band of riders next year. As showing the increasing interest in motor cycles in Holland, on June 1st, 1910, the Dutch M.C.C. had 240 members; on the 1st of this month there were 330 members on the books.



Stolen Machine Recovered.

The stolen Triumph No. 5,215, mentioned on page 549, June 1st, has been recovered by its owner, Mr. White, of South Norwood. In a letter to us last week he says, "I have recovered my Triumph, less speedometer, and I attribute it to your prompt insertion."

A.C.U. (Midland Centre) Hill-climb.

The Auto Cycle Union (Midland Centre) has obtained permission to hold an open hill-climb at Much Wenlock on Saturday, July 15th. The committee have arranged for several new classes, and particulars may now be obtained from Mr. H. C. Pickering, 239, Bristol Street, Birmingham.

The London-Edinburgh Run.

Mr. H. S. F. Morgan was unfortunately omitted from our list of those who survived the return journey from Edinburgh on Monday, the 5th inst. The Morgan runabout performed both the outward and homeward journeys in magnificent style with a 4 to 1 gear.

Mr. A. G. Clayton (3½ h.p. Humber and sidecar) was another competitor who, owing to a change of numbers, was missed from our list of survivors on the outward journey. He qualified for a gold medal.

Open Hill-climb at Shelsley Walsh.
The A.C.U. Open Race Meeting.
How to See the T.T. Races.
The Ten Feet Line at Brooklands.

The Trade in Motor Cycles.

Imports for the month of May during the last three years amounted to:

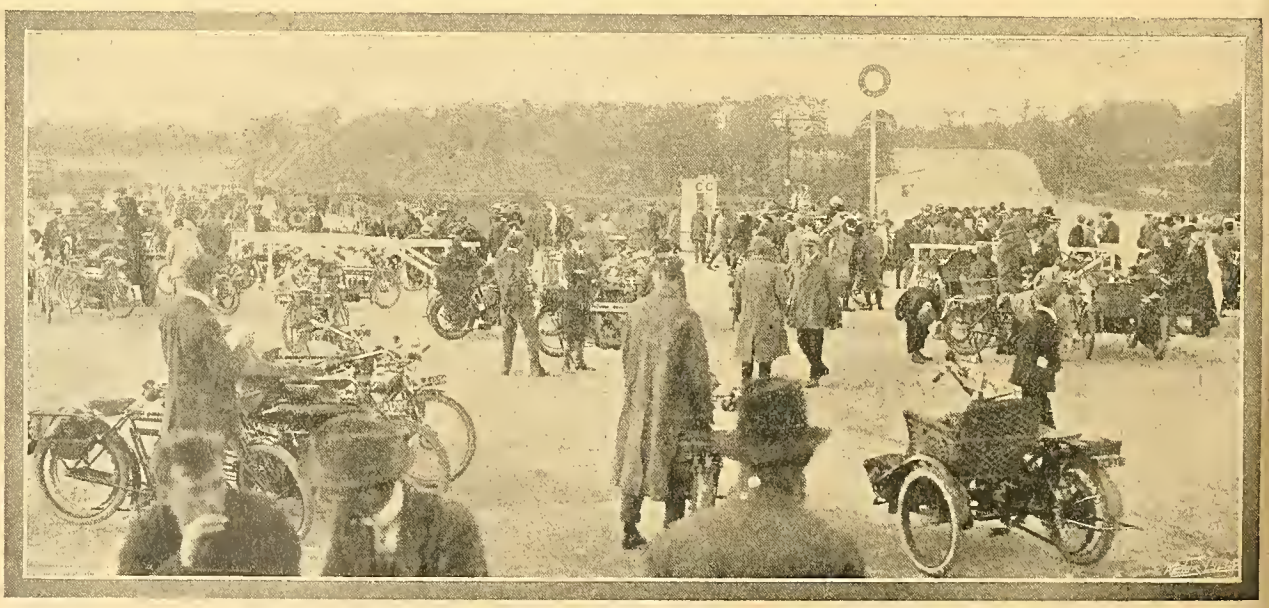
1909.	1910.	1911.
Complete motor cycles—		
£5,948	£4,916	£3,935
Parts thereof—		
£2,315	£3,581	£7,228
£8,263	£8,497	£11,163

British exports during the same month are represented as under:

1909.	1910.	1911.
Complete motor cycles—		
£3,054	£7,138	£17,520
Parts thereof—		
£2,947	£2,357	£5,186
£6,001	£9,495	£22,706

For the five months ended May 31st the imports were:

1909.	1910.	1911.
Motor cycles—		
£18,211	£20,585	£22,555
Parts thereof—		
£9,785	£23,729	£29,269
£27,996	£44,314	£51,824



A general view at the fork on the occasion of the A.C.U. Brooklands Race Meeting. (See pages 605-606).

Our exports culled from Board of Trade returns show a wonderful increase. The figures are as under :

	1909.	1910.	1911.
Motor cycles—			
	£16,521	£36,160	£82,470
Parts thereof—			
	£14.264	£15.437	£26,662
	£30,785	£51,597	£109,132

Saturday's Team Trial.

There is again a record entry for the M.C.C. Team Trial for *The Motor Cycle* fifty guinea challenge cup, to take place on Saturday next. The course is to be kept a secret. The M.C.C. headquarters will be at the Crown Hotel, Bicester, Oxon.

Chief Contents of our Summer and T.T. Number.

So many readers having written for further information in reply to the article on Motor Cycle Camping, we have decided to include a further article on this topic in our special summer and T.T. number of June 29th.

This number, being issued on the eve of the T.T. races, will contain articles on the practising with half-tone and line illustrations of the competitors' machines and the chief mechanical details.

The winning article in our timing competition will also be published in the same issue.

A feature will be made of sketches by W. R. Jones, F. Whiting, and G. E. Shepheard.

A.C.U. Notes.

BROOKLANDS TRACK MEASUREMENTS.—The Competitions Committee of the A.C.U. has been instructed to investigate the Brooklands track measurements, and verify whether or not competitors in Brooklands races ride nearer to the edge of the track than the ten-feet line.

SIX DAYS' TRIALS.—The Union has decided to admit only one class for this important competition, so that light and medium weight machines will compete together.

MEMBERSHIP.—500 members in all have been elected to the A.C.U.

AFFILIATION.—The Taunton and District M.C.C., the Carlyle C.C. (M.C. section), and the Gloucester City C.C., have been affiliated to the governing body.

SUSPENSION.—On account of his contravention of the A.C.U. Rules regulating unauthorised road trials in which the speed limit is likely to be exceeded, Mr. W. E. Catt has been suspended.

FUTURE EVENTS.

June 17—M.C.C. Seventh Annual Team Trial for "The Motor Cycle" Cup.
" 29—"The Motor Cycle" Summer and T.T. Number.
" 30—Junior T.T. Race in the Isle of Man
July 3—Senior T.T. Race in the Isle of Man
" 4—Kilometre Speed Trial on the Douglas Promenade, Isle of Man.
" 8—A.C.U. Met. Centre Eliminating Trial for Club Championship.
" 15—A.C.U. Mid. Centre Open Hill Climb.
" 22—A.C.U. Quarterly Trial (Northern).
" 28—Bradford M.C.C. Open Hill Climb and suggested speed trials.
" 29—R.A.C. Associates' Gala Day at Brooklands. Cars and Motor Cycles
Aug. 7-8—Dublin and District Open Two Days Reliability Trial.
" 14-19—A.C.U. ANNUAL SIX DAYS' RELIABILITY TRIAL. HARROGATE AS A CENTRE.

Speedy Single Cylinders.

Three riders of single-cylinder machines have now exceeded 60 miles in the hour. Following Surridge's lead on a Rudge, Stanley (Singer) came second, and on Saturday the hurly McNab (Trump-Jap) beat Stanley, and only missed the record by 143 yards, covering 60 miles 640 yards in the hour.

The Extraordinary Shooting Case at Barnet.

The extraordinary occurrence fully described in the daily papers last week, when a motor cyclist named Saul Splitter was fired at and wounded by a man on a pedal cycle between St. Albans and Barnet, is one of the most mysterious adventures which has ever fallen to the lot of a motor cycle rider. Splitter was returning from Birmingham to London with a motor bicycle and sidecar, when the petrol gave out. He was assisted in pushing the sidecar towards Barnet by the cyclist, who suddenly demanded money. Splitter is said to have given him all he possessed, but his assailant fired, hitting him five times. A man named Hay, answering to the description given by the wounded motorist, has been arrested, and an inquiry took place last Monday at Barnet. The prisoner is understood to have confessed his guilt.

THE MOTOR CYCLE
SUMMER & T.T. NUMBER.
Special Articles of Interest to the Tourist, the Tyro, and the Expert.
ADVANCE PARTICULARS OF THE T.T. RACES.
Numerous Illustrations.
1d. as Usual.
Thursday, June 29th, 1911.

Two Important Records Broken.

Triumph and Rex riders have exchanged a record. Last week W. J. Clarke, riding a Rex, captured A. E. Catt's six days' Triumph record, and this week Ivan B. Hart Davies, riding a Triumph, once more regained the End-to-end record from A. J. Moorhouse (Rex).

Next Saturday's Handicap at Brooklands.

The entries for the motor cycle handicap at the Brooklands A.R.C. meeting next Saturday are not numerous, as most of the well-known racing motor cyclists will be in the Isle of Man practising for the T.T. races. Seventeen have entered for the Third Short handicap, among them Godfrey, Surridge, Haswell, McNab, and Baker-White.

Announcing Results of T.T. Races.

On the days of the T.T. races arrangements will be made with various firms in London and the leading provincial centres to display telegrams showing the positions of the riders at the end of each lap. A list of the places where these telegrams may be seen will be published later. The same method of announcing the results was adopted by this journal last year, and was much appreciated.

The Coast Ride.

F. Dover has reached a far Northern point in his ride round the coast of England, Scotland, and Wales. Starting from Liverpool, as already announced, his destination on the 5th inst. was Maryport, 201 miles; on the 6th he reached Ayr, 411 miles: 7th and 8th, Ballachulish, 613 miles; 9th, Achnasheen, 746 miles; 10th, Kinlochewe to Ullapool, making a total of 887 miles. North of Ayr he describes the roads and hills as bad, loose, and stony: many hills are very steep, and on the Clunie mountain road, between Ballachulish and Achnasheen, the surface was so bad he was thrown off eight times. At one lonely spot in Scotland he milked a cow by the roadside, and gummed a postage stamp to the cow's horn to pay its owner for the refreshment. His 3½ h.p. Premier is standing up well, and so far he has had no mechanical trouble except a broken rear brake, due to a fall.

Competitors in the Hull and East Riding A.C.C. Petrol Consumption Trial held on Saturday last. The first two were A. Brown (3½ h.p. Rex) and A. Tuton (3½ h.p. Bradbury).

SPEED TRIALS AT CLIPSTONE.

BY kind permission of His Grace the Duke of Portland, the Nottingham and District M.C.C. held a series of speed trials on the Clipstone track, near Mansfield, last Saturday. Admission to the track was by programme (6d.), and, the weather being magnificent, a large crowd of spectators, chiefly motorists, assembled to see the fun. The course, which measured a mile, was, generally

D. C. Bolton (three-speed Martin-Jap) and H. B. Madgwick (2 h.p. Humber) starting in the lightweight class. Bolton, riding his Junior T.T. mount, proved an easy winner.

speaking, in good condition, albeit rather loose in places. There was a good and representative entry, and some splendid speeds were accomplished, and but for the long-drawn-out proceedings and the tedious delays, which bored spectators and competitors alike, the meeting could be described a success. Unfortunately for all concerned, there was a total inadequacy of officials, and consequently a great deal of work devolved upon the energetic few. Altogether the organisation left much to be desired.

The first event on the programme was the novice handicap for club members. Competitors were despatched in pairs, and one or two close and exciting finishes were witnessed.

Heat winners: R. J. W. Massey (5 h.p. Indian), 119 yards start; J. Mitchell (stripped Triumph); S. Spencer (Rudge); and R. A. Johnson (3½ h.p. T.T. Humber), 267 yards.

Second round: Massey beat Mitchell; Brittain (3½ h.p. Rudge) beat Johnson, who led to within 50 yards of finish.

Final: E. Brittain beat Mitchell.

Although half an hour late in starting the first event, the above events took nearly one hour to finish off, as each class was decided before the next was commenced, and consequently the heat winners had to ride backwards and forwards.

EVENT 2. Club handicap. Lightweights.—H. B. Madgwick (2 h.p. Humber), 43 yards start, beat F. P. Johnson (2 h.p. Humber), 43 yards, fairly easily, as also E. G. Young, a 12 stone Motosacoche rider, in the final.

EVENT 3. Club handicap.—This class was remarkable for the fine turn of speed of R. A. Johnson's 3½ h.p. T.T. Premier, and when he finished his run of successes the first spark of enthusiasm was apparent.

Heat winners were: H. B. Madgwick (2 h.p. Humber), 301 yards; L. Smith (396 c.c. N.S.U.), 103 yards; J. H. Watson (3½ h.p. Rudge); R. A. Johnson (3½ h.p. Premier); and E. S. Brittain (3½ h.p. Rudge). Byes: S. Kendall (3½ h.p. Brough) and J. E. Harston (3½ h.p. Campion-Jap).

Second round winners: L. Smith, R. A. Johnson, and J. H. Watson.

Final: R. A. Johnson.

EVENT 4. Club handicap. Unlimited c.c.—Heat winners: A. F. Cullen (8 h.p. Bat), J. D. Mitchell (Triumph), F. P. Johnson (Matchless), and G. Brough (6 h.p. Brough). The last-mentioned twin was out for the first time, and showed a wonderful turn of speed. The bore and stroke are 80 by 85 mm. After winning two heats, Brough was disqualified for having no silencers.

In the final, J. D. Mitchell (Triumph), 465 yards start, beat F. P. Johnson (4 h.p. Matchless), 384 yards.

OPEN EVENTS.

LIGHTWEIGHTS.—Scratch race.

D. C. Bolton (2¾ J.A.P.) ... ... 1m. 15⅖s.

It was six o'clock before the open events were commenced, the programme time being 4.15, and throughout the competition there was a succession of grumblings, firstly by the spectators for the slow proceedings, and secondly among the competitors for riding ineligible machines. Exactly what were ineligible or eligible machines it was difficult for anyone to say. For instance, "Touring Class" was the extremely elastic term governing this particular event, which attracted the most entries. In the absence of rules, one or two rode stripped T.T. machines, others T.T. mounts with mudguards, and protests flew thick and fast. R. A. Johnson's T.T. Premier was easily the fastest machine, but ultimately he was disqualified along with others, and the first place credited to S. Crawley (3½ h.p. Triumph). This wideawake youngster rode exceedingly well, but his plight in the final a few yards behind Johnson, with a cloud of dust thrown into his face for threequarters of a mile, was pitiable to behold. Eventually he had perforce to give up the chase. Ray Johnson's time was 1m. 8⅖s.

TOURING CLASS.—Twins.

Winner: F. Percy Johnson, (T.T. Matchless) ... 1m. 9⅕s.

T.T. CLASS.—Scratch race.

Singles: 1st, J. D. Mitchell (3½ Triumph) ... 1m. 9⅕s.
Twins: 1st, F. Percy Johnson (Matchless).

SCRATCH RACE.—Unlimited c.c.

Singles: 1st, J. D. Mitchell (3½ Triumph) ... 1m. 6⅘s.
Twins: 1st, H. D. Shaw (7 Indian) ... ... 58⅖s.

LADIES' RACE.

1st, Miss L. Berend (3½ Brough), 23 yards ... 1m. 14⅖s.

A ladies' race drew two competitors, Miss Lottie Berend (3½ h.p. Brough) running away from her less experienced associate, Mrs. Simpson, on a 3½ h.p. Rudge. Later, Miss Berend made a successful attempt to improve upon Mrs. Baxter's one mile record of 1m. 21s., on a 3½ h.p. Rex, created at the New Brighton track on Whit-Monday. Crouching low on her machine and steering a perfect course, she annihilated space at the rate of 54 miles per hour, the time announced being 1m. 6⅖s. (flying start).

Later, H. D. Shaw, riding his 7 h.p. Indian stripped, covered a flying mile in 46⅘s.

D. C. Bolton also gave an exhibition run on his 2¾ h.p. Junior T.T. Martin-Jap with A.S.L. spring fork and Armstrong three-speed gear. His time was 1m. 1⅘s.

It was almost dark by the time the events were run off.

R. A. Johnson (3½ h.p. T.T. Premier) finishing in the club handicap, which he won, as also the open touring class, but was disqualified in the latter event.

END-TO-END RECORD BEATEN.

I. B. Hart-Davies reduces figures by three hours.

Despite the fact that the A.C.U. has done its utmost to discourage record-breaking on the road, an attempt, which proved successful, was made on Monday and Tuesday this week to wrest the John-o'-Groat's to Land's End record from A. J. Moorhouse (3½ h.p. Rex), whose time was 32h. 13m. Ivan B. Hart-Davies is once again the record holder, and, quite apart from the legality of such a ride, his performance must be designated a magnificent one.

Hart-Davies is not the sort of rider to take undue risks to himself or other road users; for that matter, it would be the height of folly for any record aspirant to do so. His

Ivan B. Hart Davies, of Rugby, who at the beginning of the week regained the End-to-end motor bicycle record.

starting time from John-o'-Groat's was 3 a.m., and he reached Perth (266½ miles) at 10.30 a.m., actually 70m. ahead of his schedule. His subsequent time-table was as follows: Lockerbie, 3.55 p.m.; Wigan, 8.44 p.m.; Gloucester, 2.25 a.m. (Tuesday); Exeter, 6.45 a.m. But Hart-Davies improved upon all these times, and gradually collected hours in hand. He reached Land's End on Tuesday morning last at 12 minutes past 8, beating record by, roughly, 3h. His mount was a T.T. roadster Triumph, with Dunlop tyres.

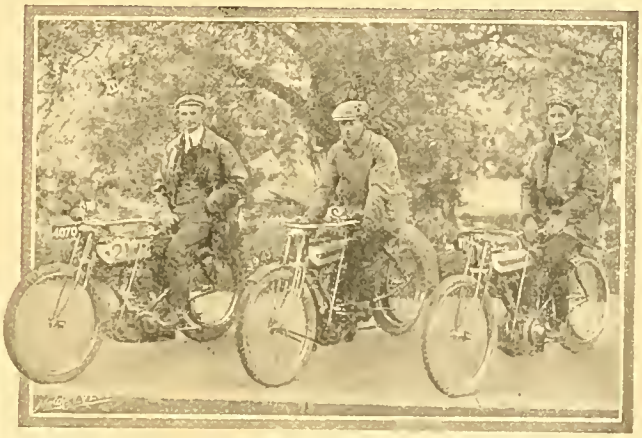
NEXT SATURDAY'S TEAM TRIAL.

Another Record Entry.

The following is a list of the clubs entered for the M.C.C. team trial, which will be held on Saturday, the 17th inst., at 1 p.m., starting from the Crown Hotel, Bicester:

Birmingham M.C.C.
Bristol B. and M.C.
Coventry and Warwickshire M.C.
Derby and District M.C.C.
Essex Motor Club.
Herts County A. and Ae.C. (motor cycle section).
Leicester and District M.C.C.
Manchester M.C.
Motor Cycling Club.
Norfolk M.C.C.
Northamptonshire M.C.C.
North Middlesex M.C.C.
Norwich and District M.C.C.
Oxford M.C.C.
S.E. London M.C.C.
N.W. London M.C.C.
Sheffield and Hallamshire M.C.C.
Streatham and District M.C.C.
Surrey M.C.C.
Sutton Coldfield Automobile Club.
Walthamstow Motor Club.

It will be seen that teams of six representing twenty-one clubs will be represented in this championship event for *The Motor Cycle* Cup.



Three winners of the Victorian (Australia) M.C.C. 100 Miles Road Race, all mounted on 3½ h.p. Triumphs. Their names are (left to right): 1st, J. S. Gulline; 2nd, L. Beauchamp; 3rd, H. Jenkins. Winner's time, 2 hrs. 11 mins., average speed 45 m.p.h., which lowered the Australian record by 14 mins. 15 secs.

THE SIX DAYS' RECORD.

A Doncaster rider claims to have covered 2,698 miles.

Last week we briefly mentioned that W. J. Clarke, of Doncaster, had commenced an attack on A. E. Catt's six days' record, riding a 3½ h.p. Rex. Mr. Clarke selected one route for his attempt, arranging to cover the distance between Doncaster and Mablethorpe three times per diem. The distance is roughly 150 miles. Postcards arrived at our offices from Clarke as follows:

"Miles covered Tuesday by speedometer, 478."
"Wednesday, 411 miles."

The next communication was a letter notifying us that the mileage recorder registered 40 miles out on second day, and the course was then checked.

A postcard from Clarke on Tuesday this week reads: "Have broken world's six days' record. Covered 2,698 miles. Particulars following."

In the absence of these particulars, details of the system of checking, and the checkers' names, we refrain from further comment this week.

Wm. J. Clarke, of Doncaster (3½ h.p. Rex), who claims to have beaten A. E. Catt's six days' record.

TOURIST TROPHY NOTES.

Further Advance Details of the Two Great Motor Cycle Races.

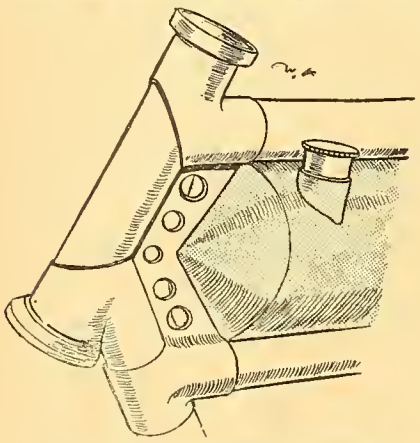
The order of starting in the T.T. Races was balloted for on Tuesday, with the result that the first six are:

Junior.	Senior.
1. H. Gibson	1. C. R. Collier
2. J. Haslam	2. H. R. Fowler
3. W. Heaton	3. Quinton Smith
4. G. E. Stanley	4. F. G. Edmond
5. Gassert	5. S. C. Perryman
6. Sam	6. W. Houghton

England, America, France, and Germany will be represented—quite an international aspect.

The Triumph is the best represented single-cylinder machine in the race, and the Matchless enjoys the same distinction amongst the twins.

Basil V. Jones, who is now located at the German works of the Premier Cycle Co., Ltd., is to ride one of the 3½ h.p. single-cylinder Premiers in the T.T. Race. F. G. Edmond will ride the other. The Premier T.T. engines will differ from standard, a new cylinder casting having been adopted, as also a steel piston, ball bearing crankshaft and roller bearing big end to the connecting rod.



A neat method of constructing the steering head of a Zenith racer.

The Rudge T.T. models will be of the ordinary standard pattern so far as outward appearance goes, but it is not yet decided whether a direct drive, clutch, or two-speed gear will be used. Probably one of each type will ultimately be adopted.

Quite a number of competitors will ride different machines in both events. S. Percy Johnson, of Nottingham, has entered a 2 h.p. Humber in the Junior Race and a 4 h.p. Matchless in the Senior event. G. E. Stanley will ride a 2½ and 3½ h.p. Singer respectively. F. W. Barnes a 2¾ h.p. and 3½ h.p. Zenith. The brothers Collier will ride Matchless machines in both races. Harry Martin will bestride a 3½ h.p. Singer and a 2 h.p. Martin-Jap. S. T. Tessier will ride a 4 h.p. and a 2¾ h.p. Bat. The German contingent, Gasert, Bolt, and Drechsler, are down to ride N.S.U.'s in both races.

The following judges have been appointed for the T.T. Race: J. W. Orde, Robert Todd, Archibald Sharp, H. P. E. Harding, and Victor Hart. Timekeepers: A. P. Ebblewhite and C. P. Glazebrook. Mr. J. R. Nisbet, who will be clerk of the course, reports on his return from the Isle of Man that the roads on the course are in excellent condition, with the exception of those over the mountain, and that every effort is being made to put this stretch into good condition. The surveyor's work, however, is being hampered by the dry weather. All dangerous parts of the course will be marked by banners some distance from the point of danger. The kilometre speed trials, which will be held on Douglas Promenade on the day following the Senior Race, will consist of a handicap race for local residents, a speed trial for machines conforming to the Junior T.T. regulations, one for machines conforming to the Senior T.T. regulations, and an all-comers race up to a 1,000 c.c.

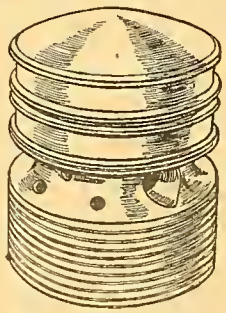
The Rudge-Whitworth headquarters will be at the Glen Helen Hotel, where Victor A. Holroyd, now happily recovered from his recent severe illness, will be in charge.

D. C. Bolton, who will ride a three-speed J.A.P. in the Junior event, accomplished a wonderful turn of speed in the Clipstone speed trial last Saturday. Fifty miles an hour is becoming quite ordinary nowadays for a single-cylinder engine of 300 c.c.

The complete list of entries is now to hand, and from it we gather there are sixty-seven competitors for the Senior event and thirty-seven for the Junior competition.

The Norton T.T. Models.

Like so many other machines, the Norton T.T. models are almost exactly standard, differing only in minor details from those which are sold to the public. J. L. Norton is well-known as an advocate of the long stroke, and this year he will again have the longest stroke of any engine in the race, viz., 100 mm., the bore being 76 mm. There is nothing remarkable about the engine, and no special work has been put into it, with the exception of making the exhaust port rather larger than usual, and also of drilling the connecting rod and slightly lightening the piston. The latter (a protected design) is shown in the accompanying sketch, and is notable for the number of oil grooves (counting those on the rings there are actually no fewer than thirteen of these). There are two broad step cut rings, each furnished with oil grooves, and between the slots for these rings is cut a very deep oil groove, which is quite big enough to accommodate a third ring. At the point at which the gudgeon pin is inserted the piston trunk is heavily cut away, and in the web so formed are a number of small holes, which are, however, not drilled for the sake of lightness but to ensure that the piston itself carries always with it a good supply of oil in contact with the cylinder walls. The piston and connecting rod together weigh 23 ozs.

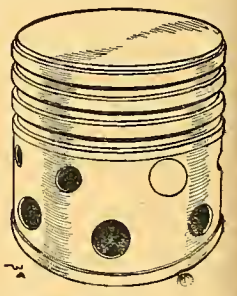


Specially lightened piston fitted to T.T. Nortons. Note the oil grooves on piston and rings.

The engine dimensions given above apply accurately only to Mr. Norton's machine, the engine used by P. Brewster will be lapped out another half millimetre, as the cubic capacity of the original engine leaves some seven cubic centimetres to spare. A Blumfield quick adjustable pulley is being used in conjunction with an Armstrong triplex three-speed gear in the back hub. The gear ratios will most probably be 3 to 1, 4 to 1, and 5 to 1.

The T.T. Zeniths.

As we have suggested in previous issues, this year's T.T. races will be, more than anything else, contests for change speed gears. In view of this fact, the Zenith machines, which have gained such a wonderful reputation for hill-climbing and speed, will naturally have many keen eyes directed towards them, and, in fact, in many quarters circumstances seem to point to their being regarded as somewhat warm favourites. Taking the machines all round, they are in almost every detail the ordinary Zenith standard model, but some little weight has been saved in the gear parts by drilling out the actuating pinions, and also by considerably piercing the belt rim. The Senior T.T. Zeniths have a single-cylinder J.A.P. engine, 85½ mm. bore × 85 mm. stroke, with ball bearing crankshaft and side by side valves. The new pattern variable jet B. and B. carburetter will in all probability be used, but this is a matter that has not yet been decided upon. The gears available will range from 3½ to 1 to 8 to 1. The principal departure in the T.T. models is the use of a dropped frame, which we think decidedly enhances the appearance of the machine, as well as making the saddle position much more suitable for high speed work. The tank holds one and a half gallons of petrol.



Zenith piston for the T.T. races. The walls have been considerably lightened.

The machine for the lightweight race conforms, with the exception of the engine, almost exactly to the same specification as the above. In this case the motor is a J.A.P. of 76 mm. bore and 65½ mm. stroke, with overhead valves. The gears range from 3⅞ to 1 to 9 to 1. The frame is also made of rather lighter tubing than that of the 3½ h.p. This machine, which is rated as 2¾ h.p., is in almost every detail exactly the same model as that on which F. W. Barnes has obtained twenty-eight first prizes.

In both the Senior and Junior models the engine is the ordinary touring standard, but is fitted with a lightened piston, a sketch of which is given above.

A.C.U. Annual Race Meeting at Brooklands.

C. R. Collier wins the Hour Race for "The Motor Cycle" Cup and Creates a New Record.

The Hour Race for *The Motor Cycle* Cup. J. R. Haswell (3½ h.p. Triumph) and A. Baker-White (Trump-Jap) had a duel for several laps. The lap scorers are seen at work on the left.

THE annual race meeting of the Auto Cycle Union was held at Brooklands on Saturday last. The weather was fine, but a brisk breeze was blowing. The meeting was fairly well attended, and just sufficiently well supported to make the events interesting and easy to follow. Unfortunately, the intervals between the races were rather too lengthy, and made the affair drag somewhat.

The first event, which started just after 2 p.m., was the open scratch race for the *Automotor Journal* Challenge Cup, holder H. Martin. For racing machines with engines not exceeding 76 × 76 mm., or 345 c.c. Distance, one lap. Weatherilt made a splendid start, but Martin passed him about a quarter of a mile from the finishing line. Result:

Rider and machine.	Dimensions.	c.c.	M. S.
1. H. Martin (1-cyl. Martin-Jap)	85.5×60	344	2 51⅘
2. P. Weatherilt (1 Zenith-Gradua)	76 ×65.5	297	2 52⅖
3. W. Chitty (1 Frays)	85.5×60	344	

Winner's speed, 57.21 m.p.h.

In the open scratch race for the *Motor Car Journal* Challenge Cup, Matchless machines came to the fore. The event was for any type of machine not exceeding 1,000 c.c., distance four laps. C. R. Collier, who was riding a twin Matchless fitted with a handle-bar controlled oil pump operated by Bowden wire, led easily at the end of the first lap, and thereafter appeared to have no cause for worry, even looking back to see if anyone was in sight at the end of the third lap. He was followed by Franklin, Luce, and Sproston, and except for widening the distances separating them, their positions did not alter. Collier finished an easy first by 500 yards. Result:

Rider and machine.	Dimensions.	c.c.	M. S.
C. R. Collier (2-cyl. Matchless)	90 ×77.5	986	9 47⅘
C. B. Franklin (2 Indian) ...	82.5×93	994	10 9⅕
A. J. Luce (2 Bat)	85 ×65	733	11 39⅕
A. J. Sproston (1 Rudge) ...	85 ×88	499	

The Sidecar Race.

For the first time this year a passenger motor cycle race was run on Brooklands, open, according to the programme, to passenger machines with engines not exceeding 1,000 c.c. (trailers barred); distance, two laps. Of the three starters, Webster alone had his engine running, the others relying solely on being pushed off to get started. Bashall, using the only single-geared machine in the event, led at the end of the first lap, and was followed rather closely by Wells, while Webster brought up the rear. The positions never altered, and Bashall won by about 100 yards. Result:

Rider and machine.	Dimensions.	c.c.	M. S.
J. T. Bashall (2-cyl. Bat and s.c.)	85 ×85	964	6 44⅖
W. H. Wells (2 Indian and s.c.)	82.5×93	994	
E. Webster (2 Matchless sc.)	85.5×85	976	

Winner's speed, 48.44 m.p.h.

The Great International Open 50 Kilometre Scratch Race, first prize £10, second prize £3, and third prize £1, found only three supporters, although there were eight entries. One of the entrants, Godfrey, complained that some evilly disposed person had pushed a piece of a round file into the ports of his cylinder and had broken a piston. The competitors started in the railway straight and finished at the fork. The order at the end of the first lap was C. B. Franklin, H. A. Collier, and A. J. Sproston (Rudge). In the next lap Collier led and Sproston withdrew. All that happened for the remainder of the race was for Collier gradually to increase his lead, when at the end of the eleventh lap he was threequarters of a lap ahead of Franklin. Result:

Rider and machine.	Dimensions.	c.c.	M. S.
1. H. A. Collier (England), (2-cyl. Matchless)	85.5×85	976	27 25⅘
2. C. B. Franklin (Ireland), (2-cyl. Indian)	82.5×93	994	29 21

Winner's speed, 68 m.p.h.

During the tea interval Jake de Rosier, the champion motor cyclist of America, gave an exhibition ride. He was down in the programme to make an attempt on the five miles record, but this statement, Mr. Wells informed us, was unauthorised. De Rosier had no machine of his own. Godfrey's was *hors de combat*, and so he rode Franklin's, a mount which was quite new to him and fitted with a strange carburetter. De Rosier steered with one hand and held the carburetter with the other, while he appeared to be unused to the uneven surface of the track. His speed was 64 m.p.h. On concluding, he was not enthusiastic about this departure from standard, and said that when he put his hand over the air inlet the machine shot forward.

Hour Race for "The Motor Cycle" Cup.

The last event was the open one hour scratch race for *The Motor Cycle* Challenge Cup, holder W. Chitty, for machines with engines not exceeding 500 c.c. for single-cylinders, and 585 c.c. for multi-cylinders, and conforming to the T.T. regulations. Some of the entrants had no mudguards fitted, and therefore did not compete for fear of protests being lodged, and there was some misunderstanding on this point, as the B.M.C.R.C. has exeused the fitting of these adjuncts in Brooklands track races this year. One competitor, we are told, stated on his entry form that his mount was unprovided with mudguards, and as no comment was made he understood he would be allowed to start. The race, however, was an interesting one, and well worth watching. The order at the end of the first lap was C. R. Collier, G. E. Stanley, and H. A. Collier almost neck and neck, then Tessier, McNab, Butler, Haswell, Baker-White, Oldman, and Elce. In the next lap C. R. Collier increased his lead, his brother lapped Tessier, McNab took fifth place, Stanley was third, Baker-White and Haswell were having a hard

A.C.U. Annual Race Meeting at Brooklands.

tussle for sixth place, Elce brought up the rear, and Oldman stopped through a disintegrated compression tap which he replaced by a sparking plug. In the next lap C. R. Collier still improved on his position, and Oldman got under way again. In the fourth lap Elce retired through overheating. In the next round Butler, whose engine had been missing fire, withdrew. In the seventh lap H. A. Collier withdrew owing to belt trouble, leaving Stanley in second place and McNab in third, while Haswell and Baker White fought for fourth place. In the ninth lap C. R. Collier, going better and better, passed White and Haswell, the latter losing ground owing to a slack belt. Lap ten saw Collier going better than ever, and Haswell dropping behind. He retired two laps later, and Tessier had also to withdraw after several stops for plug trouble.

Collier makes good use of the New Gear.

In the fifteenth round Collier was threequarters of a lap ahead and lapped McNab, the third man, who was running splendidly, and for some considerable time hung on to Collier. The next lap saw the disappearance of Baker-White owing to valve trouble, and all that was left of them were Collier, who was now close on Stanley, McNab and Oldman, who were nearly two laps behind. Stanley, who had been inside record all the time, now began to lose ground, and left the honours of the day to Collier and McNab. Result :

	Rider and machine.	Dimensions.	c.c.	mls.	yds.
1.	C. R. Collier (2-cyl. Matchless)	76 ×64	580	64	430
	Class D record.				
2.	F. A. McNab (1 Trump-Jap) ...	90 ×77	486	60	640
	Failing to equal Surridge's record by 143 yards.				
3.	G. E. Stanley (1 Singer) ...	85 ×88	499	59	1386
4.	W. O. Oldman (1 Zenith-Gradua)	85.5×85	493		

C. R. Collier rode a T.T. machine fitted with the expanding pulley gear referred to in our issue of last week. He was already the holder of the record, the distance he covered on April 26th this year being 63 miles 735 yards. The prizes in each event were: 1st, silver cup; 2nd, silver cup; 3rd, bronze medal.

The chief officials were: Clerk of the course, Mr. J. R. Nisbet; judges, Major F. Lindsay Lloyd, R.E., Messrs. J. W. G. Brooker, and V. Hart; timekeepers, Messrs. J. H. Burley and T. H. Woollen; secretary, Mr. F. Straight. These officials were aided by a number of marshals. Several aeroplanes were flying during the evening; one, driven by Lieut. Watkin, flew over the crowd during the meeting.

A curious photograph of C. R. Collier (Matchless) and F. A. McNab (Trump-Jap) in the hour race. Collier lapped McNab and covered 64 miles 430 yards in 60 minutes, beating his own record.

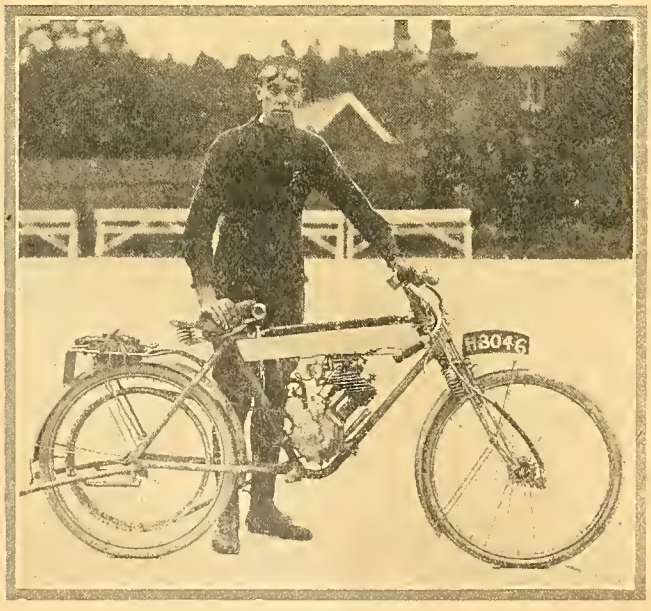
A NEW LIGHTWEIGHT RECORD.

C. Stanley Franklin, mounted on a 2 h.p. single-cylinder M.R., succeeded in establishing a six hours' record, Class A, for machines with engines not exceeding 275 c.c., on Friday afternoon last. The afternoon was fine, but dull, cold, and rather windy.

Franklin got under way at 1.45, being started by Mr. J. H. Burley, the timekeeper. His mount was of standard pattern, except that he used racing handle-bars and a rather large tank. The idea of the ride was not so much to attain a record speed, but to demonstrate the capabilities of an ultra-lightweight. Franklin's only stops were to screw up the petrol pipe union in the third lap and to raise his gear in the twentieth. The results were:

First hour	23 miles	1134	yards
Second ,, ...	50 ,,	1285	,,
Third ,, ...	77 ,,	472	,,
Fourth ,, ...	104 ,,	86	,,
Fifth ,, ...	132 ,,	115	,,
Sixth ,, ...	159 ,,	1055	,,
50 miles	1h. 58m. 34s.		
100 ,, ...	3h. 50m. 33⅖s.		
150 ,, ...	5h. 39m. 25⅗s.		

The 100 miles record for this class is credited to B. Yates, who covered the distance in 3h. 18m. 50.4s., October 8th, 1910.



C. S. Franklin, who, on a M. R. in touring trim, broke the six hours' record for lightweights, covering 159 miles 1,055 yards.

HERTS. COUNTY OPEN SPEED TRIALS.

Below we give the results on formula of the Herts County Open Speed Trials. The results on time were published on page 551.

	Fig. of Merit.
DIVISION A.	
Class 1.—1, H. Berwick (2 Humber)	10.7
Class 2.—1, S. Wright (3 Humber, twin)	14.1
Class 3.—1, W. F. Newsome (3½ Triumph)	14.2
Class 4.—1, H. V. Colver (2¾ Enfield)	13.5
Class 8.—1, F. A. Hardy (5 V.S. and s.c.)	62
DIVISION B.	
Class 1.—1, A. G. Fenn (2 Humber)	11.4
Class 2.—1, H. V. Colver (2¾ Enfield)	14.1
Class 3.—1, S. Crawley (3½ Triumph)	18.8
Class 4.—1, W. F. Newsome (3½ Triumph)	15.4
Class 5.—1, H. V. Colver (2¾ Enfield)	13.7
Class 6.—1, W. F. Newsome (3½ Triumph)	15.4
Class 7.—1, H. V. Colver (2¾ Enfield)	13.8

Classes 5, 6, and 7 in Division A, and Class 8 in Division B, were on time only, and were published in our issue of June 1st.

CLUB NEWS.

Cambridge University M.C.C.

The results of the hill-climb on the 1st inst. at Moulton Hill, near Newmarket, were as follows on formula: 3½ h.p. standard class, J. Reed (Triumph); 3½ h.p. T.T. class, N. Gray (Triumph); twins, C. R. Farnsworth (5 h.p. Indian).

Marlborough Athletic Club (Motor Cycle Section).

A reliability trial and speed-judging competition was run off on June 3rd over a course *via* Watford, Tring, and Aylesbury to Bicester and back to Edgware (George Hotel), about 100 miles. There were seventeen starters, of whom the first four were: 1, J. Peachey (6 h.p. Sarolea); 2, A. W. Hunt (6 h.p. Sarolea); 3, W. Goodhugh (3½ h.p. Brown); 4, F. J. Watson (5 h.p. Kerry).

Sarum District M.C.C.

The results on formula of the above club's hill-climb have now been calculated, and the following are the positions of the first three riders:

		Fig. of Merit.
1.	J. Fleming (2 Humber)	249
2.	A. Evans (2 Humber)	236
3.	H. Edwards (2¼ F.N.)	192

Ripon and District M.C.C.

The speed-judging contest for the Collier cup (presented by Mr. Stanley Collier) and the gold medal given by Mr. W. Hemsworth, the captain, brought out seventeen starters The distance was thirty-six miles. Result:

1. T. Bruce (5 h.p. Rex de Luxe and sidecar).
2. A. D. Calvert (3½ h.p. B.S.A.).
3. J. Webster (3½ h.p. Triumph).

Harrogate and District M.C.

In the hill-climb last Saturday for the Pilcher Trophy the winners in the various classes were: Class 1, touring singles, W. E. Grange (3½ h.p. Bradbury). Class 2, variable gears, C. Nettleton (2½ h.p. New Hudson). Class 3, any single-cylinder, F. Mackay (3½ h.p. Singer). Class 4, no entries. Class 5, flexibility trial, G. Hill (3¾ h.p. Scott). The fastest time of the day was made by F. Mackay, and the trophy was awarded to C. Nettleton, who was the heaviest rider (fifteen stones) and rode the smallest machine, a 2½ h.p. New Hudson.

Shropshire M.C.C.

The long distance reliability trial to Llandudno and back (161 miles) for the club challenge cup was run off in magnificent weather on Whit-Monday. Of seventeen entries fourteen started, and nine completed non-stop runs.

	Rider and machine.	Total marks.
1.	H. H. Gibbs (3½ h.p. Rudge)	491
2.	A. J. Poole (3½ h.p. Bradbury)	489
3.	P. W. Owen (6 h.p. Zenith-Gradua) ...	488

J. R. Thompson (3½ h.p. B.S.A.) starting in the open class of the M.C.U.I. hill-climbing competition at Derriaghy. He won both events on the programme.

Dublin and District M.C.

The results of the above clubs Dublin to Lisburn and back trial are:

		Marks gained.
1.	C. E. Murphy (Triumph)	98
1.	T. Woods (Premier)	98
3.	J. A. Carvill (Triumph)	97

Cork and District M.C.C.

The result of this club's reliability trial from Cork to Waterford and back on Whit-Monday was as follows:

		Marks lost.
1.	R. S. Rennie (3½ Matchless)	0
2.	P. Cox (2¾ Douglas)	0
3.	L. Dobbin (3½ Rudge-Whitworth)	0

Westmorland M.C.C.

In the reliability run last week from Kirkby Lonsdale to Alston and Kendal (150 miles), four competitors ran equal for first place, and a re-run was accordingly held to Newby Bridge and back, with several secret checks and timing to seconds, with the following result: 1, H. Westwood (3½ h.p. Triumph), three seconds out; 2, T. Armstrong (3½ h.p. Triumph), eight seconds out; 3, Geo. H. Braithwaite (3½ h.p. Rudge), twelve seconds out.

M.C.U.I. (Ulster Centre).

This centre held a hill-climb on Saturday last on one of the roads running up Colin Mountain at Derriaghy.

		H'cap s.	Nett time m.	s.
	PRIVATE OWNERS' CLASS.			
1.	J. R. Thompson (3½ B.S.A.) ...	2		58⅘
2.	A. Kirk (3½ T.T. Triumph)	1	1	1⅕
3.	J. M. Bride (3½ T.T. Premier) ...	2	1	3⅖
	OPEN CLASS.			
1.	J. R. Thompson (3½ B.S.A.) ...	2		59⅕
2.	Alister Kirk (3½ T.T. Triumph) ...	1	1	1
3.	J. A. Carvill (3½ T.T. Triumph) ...	scr.	1	2⅘

Edinburgh and District M.C.

Last Saturday three teams representing respectively the Perth, Scottish Border, and the Edinburgh Clubs, competed for the Hamilton Shield over a fifty mile course which has to be covered twice, starting and finishing at Fairmilehead. A splendid contest ensued, resulting in a win for Edinburgh, who were represented by J. R. Alexander (7 h.p. Indian), R. H. Monat (3½ h.p. Rudge), W. Dobson (5 h.p. Indian), T. E. B. Chalmers (5 h.p. Bat), and J. H. Forrest (3½ h.p. Triumph).

Perth and District M.C.

On the 5th inst. there was an all-day reliability trial, the members competing for the club challenge trophy and gold medal, a non-skid cover presented by the Kempshall Tyre Co. of Europe, Ltd., and other prizes. The route was one of 166 miles from Perth to St. Fillans and back. Full marks were secured by the following: Messrs. J. W. Adamson, D. Batchelor, J. G. Beveridge, J. Y. Cairnie, and W. Murray all on 3½ h.p. Triumphs, and Bruce Syme on a 3½ h.p. touring Rudge. To decide the prize winners the six competitors who gained full marks will compete in a fifty miles non-stop run over a hilly seven miles circuit at Rhynd, near Perth, to-day.

North-west London M.C.C.

The annual hill-climb was held on a hill near Dagnall, Herts, last Saturday, and some thrilling riding was seen. The fastest time of the day was made by R. L. Printz (6 h.p. Bat). Results:

Class I. (lightweights).—1, A. C. Robbins (2 h.p. Humber); 2, C. M. Down (2¾ h.p. Enfield); 3, Mrs. Newbury (2¾ h.p. Douglas).

Class II. (singles).—1, W. Cooper (3½ h.p. Brown); 2, E. A. Colliver (3½ h.p. Zenith); 3, F. A. Rose (3½ h.p. Triumph).

Class III. (twins).—1, C. M. Down (2¾ h.p. Enfield); 2, R. L. Printz (6 h.p. Bat); 3, Hal Hill (5 h.p. Bat).

Class IV. (passenger machines) was abandoned owing to lack of entries.

Class V. (fastest time to 500 c.c.).—1, E. A. Colliver (3½ h.p. Zenith); 2, W. Cooper (3½ h.p. Brown); 3, E. L. Buchanan (3½ h.p. Norton).

Class VI. (fastest time to 1,000 c.c.).—1, R. L. Printz (6 h.p. Bat); 2, Hal Hill (5 h.p. Bat); 3, C. M. Simpson (7 h.p. Indian).

Competitors in the Sarum and District M.C.C. hill-climb. For results see page 579 last week.

Stockport and District M.C.C.

The first hill-climb was held last Saturday at Woodhead, on the same hill used by the Manchester M.C. The fastest time of the day was made by H. Marsden, on his 5 h.p. T.T. Matchless, being followed by A. J. Moorhouse, on his 7 h.p. Indian, $\frac{2}{5}$s. slower. In the single class, F. C. Coopes, on his T.T. Triumph, made the fastest ascent, $9\frac{2}{5}$s. slower than the fastest time of the day. In the trade class, H. J. Scales ($3\frac{1}{2}$ h.p. Scale single) and A. Greenhatch (7 h.p. M.S.L. twin) respectively made the fastest times. The sidecar class was won by J. Emerson (5 h.p. M.S.L.)

Hartlepools and District M.C.C.

The reliability trial held on May 28th over a very difficult course of 150 miles, from West Hartlepool to Alston *via* Barnard Castle and Middleton-in-Teesdale, and back *via* Hexham and Blanchland, for prizes presented by the Kempshall Tyre Co., was won by H. Durkin on a $3\frac{1}{2}$ h.p. P. and M. and sidecar, which went through absolutely non-stop. Messrs. W. T. Walton, W. C. White, C. Clark, and J. Hammond, all on $3\frac{1}{2}$ h.p. Triumphs, also made non-stop runs, the first two tieing for the second prize, being one mark only behind the maximum gained by Durkin.

SCARBOROUGH AND DISTRICT M.C. KILOMETRE SPEED TRIALS.

THE annual speed trials of the Scarborough and District M.C.C. were held on a private course near Scarborough. The course was a perfect one, being dead straight and level for a mile. The competitors met at a rendezvous twelve miles from Scarborough, and then proceeded to the course some few miles further on. The prizes were: Webster trophy for fastest time of day (with gold medal). Gold medal for fastest single-cylinder. Five prizes on handicap. Each competitor had one timed run, and from this he was handicapped. Then another run was given and any competitor improving upon his original time more than five per cent. was disqualfied. Some good speeds were accomplished. H. D. Shaw on a 7 h.p. Indian won the Webster trophy in $29\frac{3}{5}$s. (speed 75.52 m.p.h.), while Daniel Bradbury on a $3\frac{1}{2}$ h.p. Norton won the gold medal for fastest time on a single-cylinder in $35\frac{2}{5}$s. (speed 63.15 m.p.h.).

The handicap winners were:

		Handicap figures.
1.	H. Wilson ($3\frac{1}{2}$ h.p. Triumph)	$27\frac{4}{5}$
2.	H. L. Kettle (2 h.p. 1910 M.R.) ...	28
3.	J. E. Truefitt ($3\frac{1}{2}$ h.p. Triumph) ...	$30\frac{2}{5}$
4.	E. G. Walker ($3\frac{1}{2}$ h.p. Triumph) ...	$30\frac{4}{5}$
5.	S. H. Clay ($3\frac{1}{2}$ h.p. Triumph)	$31\frac{2}{5}$

The prizes were afterwards presented at the Scarborough Club House.

H. Wilson ($3\frac{1}{2}$ h.p. Triumph) winning the handicap event in the Scarborough and District M.C. speed trials. An electrical timing apparatus was used.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Timing the Spark.

(1.) Will you advise me how to set the timing of magneto of 6 h.p. twin N.S.U. motor cycle, the front cylinder of which lies almost flat? (2.) Would new points to magneto advance the firing, as it appears to spark rather late in the stroke, even with the lever fully advanced?—A.B.

) Fully retard the spark, and set the gneto so that the points are about to eak when the piston is on the top of e compression stroke. If you set No. cylinder correctly, the other will be ght. (2.) Yes, the firing would be ry slightly advanced.

Knocking and Control of Air Lever.

I am puzzled about my 1911 7 h.p. Rex. Can you tell me why the engine should knock when rushing a hill with the air well open? As soon as I cut off the air the machine stops knocking at once, but slows down though climbing well. Is this due to high compression or faulty carburetter adjustment?—D.L.

is no uncommon symptom for an engine knock when too much air is admitted the carburetter. If you find by sing the air the knocking ceases we not think there is anything seriously ong. Probably you close off the air ghtly too much, which results in the crease of speed. A finer adjustment the air lever should enable you to event the knocking and still keep up e maximum speed.

Size of Jet. Timing of Valves and Spark.

Would you kindly answer the following queries: I have a 5 h.p. twin Rex, m.o.v., and two-speed. (1.) What size jet do you recommend? I have in a 31, but cannot give any extra air. (2.) The inlet valves open just as piston goes down on suction stroke. Is this correct? The engine starts easily and will run slowly. (3.) I am told that the ignition is timed late. Would advancing it give more power?—S.C.

.) The correct size of jet is best found t by experiment. If you cannot give tra air with your jet try a larger e or a smaller adapter. (2.) he timing of the valves appears to be rrect. (3.) Yes, if the engine does not nock you might well try advancing the nition a trifle. It would give more peed and extra power.

Acetylene Gas as a Fuel.

Can a motor engine be driven by carbide gas on the road? I have been trying my machine on the stand, and it seems to go all right, lasting about one hour, with the ordinary generator holding about a quarter of a pound of carbide and about half a pint of water. I have had a small tube about $\frac{1}{16}$in. opening, and leading to the engine, and another air pipe leading to the generator, completely doing away with carburetter, tank, etc. The cost per hour works out at about 2d., but what effect will it have on the engine parts?—J.W.

Yes, it can be driven by carbide, but it is not reliable, as the explosions are very violent and the engine is difficult to control. Starting is also erratic, and there is the danger of a broken connecting rod. We have not carried out sufficient experiments on the road, but we should be interested to hear the results of your further tests.

Adjustment of Platinum Points.

My mount, a 3½ h.p. Minerva m.o.i.v., trembler coil, and plain make and break, will not fire regularly, only at the very slowest speed. The moment I advance the ignition lever it starts missing fire. It will not take extra air at all, but will climb any hill in the district slowly. On the level or downhill it seems to over-run itself. I have tried different jets to carburetter from 3 to 7, also different choke tubes.—R.F.

It is difficult to tell you the exact cause of the trouble, but most probably you will find it is due to wear in the contact breaker or adjustment of the contact points. See that the platinum points are making firm contact in whatever position you set the ignition lever, then start the engine on the stand, and turn the platinum screw approximately one complete turn nearer the point on the trembler blade. This, we fancy, will cure the trouble. If it should not, the trembler on the coil should be adjusted.

THE TRENT FERRY AT ALTHORPE.

A new railway bridge is shortly to be built across the river at this point which will have a road to carry vehicular traffic. Until this is built these ferries must be used, or one would have to go on to Gainsboro'—about twelve miles. Many motor cyclists use this ferry, and getting up the steep and muddy steps proves no slight task. The machine portrayed is an L.M.C.

Welwyn to Harrogate.

Kindly tell me the best way from Welwyn to Harrogate. As I may want to ride to Harrogate several times this summer, I want to be sure that I travel the best way.—S.F.C.

By the main Great North Road is the best way, through Baldock, Biggleswade, Buckden, and straight on past Norman Cross to Stamford and Grantham. Be careful of traps four miles each side of Grantham. You are sure to see an A.A. scout on the road near the commencement of the trap, which ends at the north at Ponton. Beyond Grantham another trap begins at the foot of Gonerby Hill and ends at Long Bennington. Be careful not to exceed twenty-five miles an hour over these sections. Of course, you must drive carefully in all villages on the Great North Road; otherwise we do not know of any traps. North of Grantham you go through Newark, Retford (where special caution is necessary in the ten-mile limit), go straight on following the signposts to Edinburgh, lately put up by the Royal Automobile Club, until you reach Wetherby. Immediately after you have crossed the bridge take the first turning to the left and go through Spofforth to Harrogate.

Overheating and Knocking.

My motor cycle is a 3½ to 4 h.p. Quadrant, 1908 magneto, gear 4½ to 1. I find it has a tendency to overheat when running 10 to 15 m.p.h. with throttle lever one-third open and air lever a little more than half open, but if I advance spark and do about 25 to 30 m.p.h. it will take air fully open and slightly less gas, and keep much cooler; in fact, it runs perfectly at this speed. It has an automatic inlet valve. I have reduced the opening to slightly under ⅛in., and strengthened spring to 3 lbs. resistance. When restarting, the engine always knocks a little as it picks up. What fault do the above symptoms point to? I do not think jet is too large, as it will not take full air except at about 30 m.p.h. I give half a pumpful of oil every six miles.—PUZZLED.

The symptoms point to a dirty engine, *i.e.*, carbon deposits on the piston and cylinder head, causing a knock when restarting, and inefficiency of the inlet valve at slow speeds, preventing you from running comfortably throttled down. You have done quite right by reducing the inlet valve opening and strengthening the spring. The carburetter adjustment seems to be about right. We should recommend you also to verify the strength of your exhaust valve spring. Running with the spark retarded is likely to cause overheating. If you fit a smaller adapter around the jet you will find that you can obtain a constant and weaker firing mixture with the throttle lever only a shade open.

A Sudden Stoppage.

My 1910 Triumph wants a little adjustment in the carburation somewhere. With sidecar and almost full throttle up stiff hill it runs well, but when the worst of the hill is passed suddenly pulls up. It is not labouring or knocking, but as if petrol was not supplied quick enough to keep it running at wide throttle. So I tested petrol pipe and float, and found some fluff in gauze almost stopping it, between pipe and float chamber. Removing that the chamber flooded properly again when needle was lifted, and I thought trouble was found and cured, but same thing happened again up stiff hill with wide throttle. Would it be the jet or float not properly adjusted? Evidently it is to do with the carburetter.—A.B.M.

First of all, do you take care to close the air lever gradually as the machine slows down? This is all important in hill-climbing. If you do, probably you have not removed quite all the trouble, and there is still some fluff in the petrol pipe, which causes an obstruction. All carbon deposit must be removed from piston head; you might also try a larger jet.

Driving Licence must be Produced on Demand.

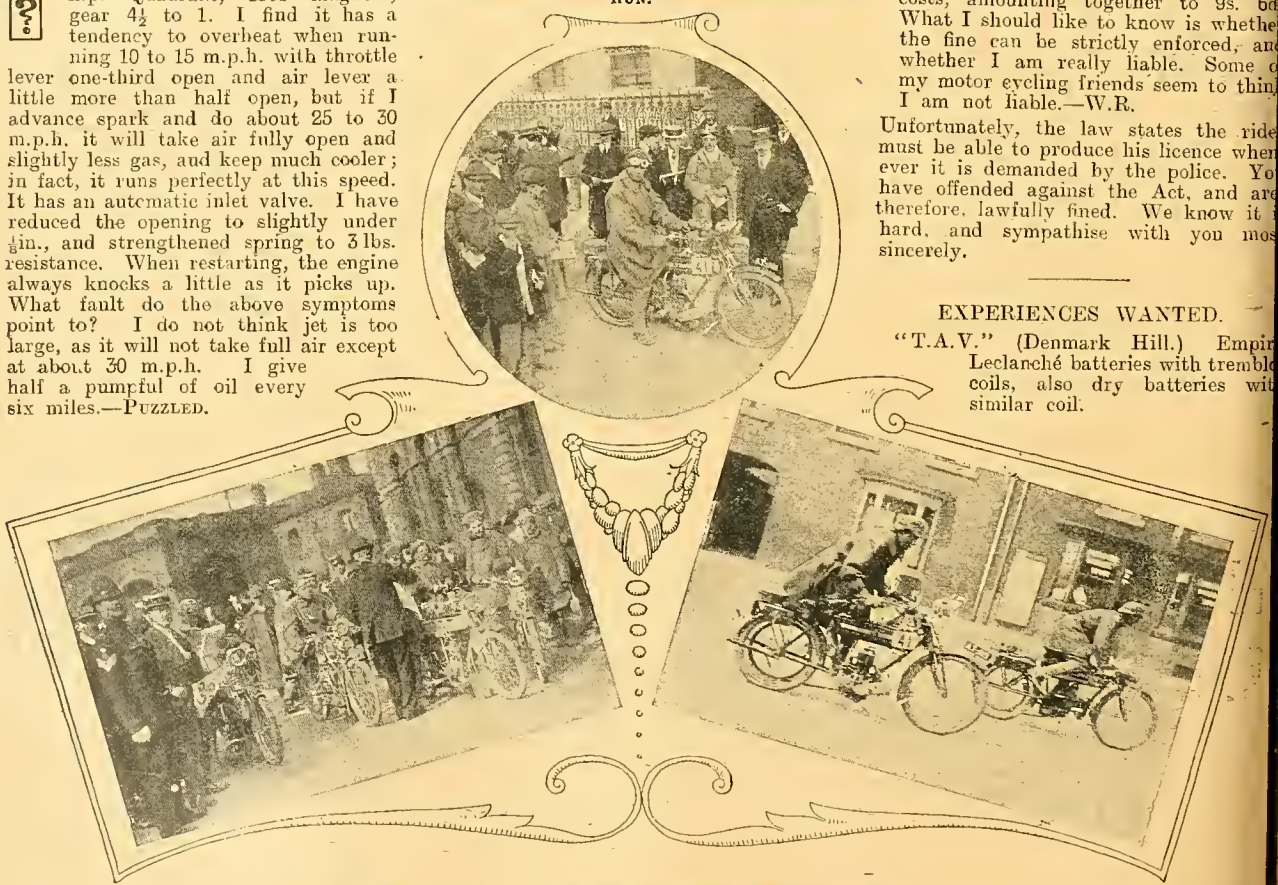
The other day whilst out with my motor cycle and sidecar I passed through a trap, and was stopped and asked for my licence. I was unable to produce it, however, having inadvertently omitted to take it with me owing to having changed clothes before starting. The fault, therefore, was quite unintentional. My statement as to having a licence in my possession was verified at home by the inspector of police, working on instructions from the borough in which the trap was situate. I was summoned to appear, but was unable to do so owing to business, and fined 1s. and costs, amounting together to 9s. 6d. What I should like to know is whether the fine can be strictly enforced, and whether I am really liable. Some of my motor cycling friends seem to think I am not liable.—W.R.

Unfortunately, the law states the rider must be able to produce his licence whenever it is demanded by the police. You have offended against the Act, and are therefore, lawfully fined. We know it is hard, and sympathise with you most sincerely.

EXPERIENCES WANTED.

"T.A.V." (Denmark Hill.) Empire Leclanché batteries with trembler coils, also dry batteries with similar coil.

IN YORKSHIRE DURING THE LONDON-EDINBURGH RUN.



R. Ellis (3½ h.p. B.S.A.), a successful double journey competitor, at York.

F. Mussell (7 h.p. Rex), A. V. Deacock (N.L.G.-Jap), S. T. Tessier (5 h.p. Bat), and H. G. Bell (F.N.) signing the checking sheet at York.

Leaving the Northallerton control. E. Kickham (Douglas) and R. Ellis (B.S.A.) vaulting into the saddle.

THE MOTOR CYCLE

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VIVAT REX—VIVAT REGINA.

THE auspicious occasion with which this particular number coincides calls for a few words from the editorial pen. Our beloved country and the whole empire rejoices in its Sovereign -a man of our own time, brought up amid walls of eel to the tune of revolving cranks and reciprocating istons. The man-o'-war was his cradle rocked on e ocean, the reverberating engines sang him to eep when his watch on deck was over.

Versed as he is in the mysteries of engines, modern ns, and the deadly torpedo, we feel our King is a n after our own heart. Having had such an ucation, cannot we motor cyclists feel that our vereign is in sympathy with our dearest hobby? is true that the joys of motor cycle riding have t been brought closely before him—it is hardly to expected that they would be—but King George is himself an automobilist who is a real friend of the movement, and a concession he has already conferred on the motoring community has been to raise the speed limit in the Royal Parks from ten to twelve miles an hour, and to see that the new regulation is not too strictly interpreted.

We have, then, a good King who was brought up by a father who was the finest statesman of his time, and gave his son a training which has specially suited him for the high office of kingship. To-day he is crowned, and, in company with our numerous readers at home and beyond the seas, in those far-off countries our Sovereign himself has visited, we wish King George and his Consort Queen Mary long life, good health, happiness, and a prosperous reign.

"God Save the King!"

TOURIST TROPHY TOPICS.

NEVER was a road race more keenly canvassed beforehand than the 1911 Senior T.T. It is frankly impossible to foretell with any confidence what the score board will record when the course is reopened on July 3rd. No doubt a majority of the prophets will foretell yet another Matchless victory, and as the Collier-Jap combination has so often proved invincible, the majority may well prove to be right. But I think the Colliers are up against a tougher proposition than they have ever tackled in the whole course of their strenuous lives.

To commence with, their luck has always been in. Either Harry or Charlie has always been on the premises at the finish, his engine still running with glorious "bubbling" smoothness after 150 miles of gruelling speed work; and by the law of averages, luck does not keep in for ever. Before long it must happen that both the Colliers will encounter trouble in one and the same race, for all their skill and caution.

Single and Twin Capacities.

Again, the singles are not conceding them quite as much cylinder capacity as in the past. I take it the extra 85 c.c. makes the twins about four or five miles faster in the hour on Brooklands Track, and that this extra bit of pace is not snatched by reason of a higher compression than will be used on the island, so that with the aid of the multi-speed pulley the Colliers will retain the extra flexibility and lightning acceleration peculiar to the twin. Consequently, as there are comparatively few twins in the race, the Colliers need only get one machine through without trouble to finish ahead of the singles.

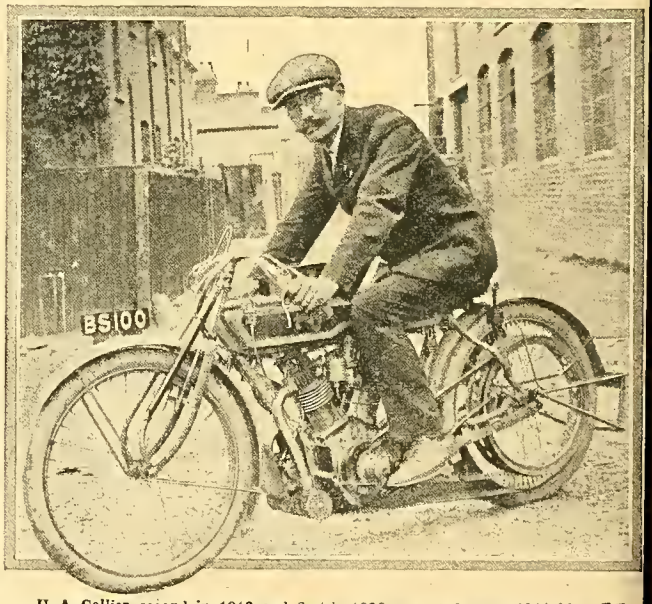
But even then they may reckon without their hosts. The Bat team have never yet exhibited that saving spice of restraint which must go hand in hand with sheer speed if speed is to win; if there is the right dash of soda in the Bat brandy this year, the Colliers will have to go harder than they have ever gone before.

More threatening still, perhaps, is the Indian team. The Hendee quintette contains three men who are humanly certain to finish high up, and two who are as likely to win outright as the Colliers. Alexander, Moorhouse, and Franklin are among the very cream of racing men, though a victory for any of them would come as a surprise. But Godfrey and de Rosier might easily share the first and second places. As the Indian team was early put out of the running by tyre troubles last year, many of us have forgotten how Lee Evans, when he was practically a novice at road racing, began by leading the Matchless team in the 1909 race, and, finally, in spite of fading engine tune, hunted Collier grimly home.

De Rosier has a bigger reputation than any man on earth. Godfrey is the ideal motor cycle racing man His small stature invests the racing position, which is sustained agony for a medium-sized athlete, with comparative comfort. His muscle and stamina are magnificent. His pluck and dash are unrivalled, and his experience is great. A trade expert told me last week he regarded Godfrey as Jack Marshall's equal in everything but luck; and, to my mind, Godfrey is quite as formidable as de Rosier. The fastest and luckiest couple who survive from the Indian and Matchless teams will, in my opinion, have the finish to themselves.

Is a Single-cylinder Victory Possible?

There is, however, much to be said for those who regard a single-cylinder victory as possible. It cannot be denied that the Triumph team have always hunted the twins home with desperate grit in the past, when they were far more heavily handicapped in cylinder dimensions. If we take the hour record as a pointer to the most recent form, the Singer and the Rudge have each a trifle in hand of the Triumphs in respect of sheer speed, while, if some jockeys are new men, Stanley has been known as a first-flighter for a long time past, and young Surridge only requires a little road practice to make a champion. Newsome and Creyton have already shown they can last out a complete race at a shade under winning speeds, and hence



H. A. Collier, second in 1910 and first in 1909, mounted on his 1911 4 h.p. T.T. Matchless-Jap with variable pulley gear. It was described in detail in our issue of June 8th.

they command more respect than the ruck, but if mechanical factors alone are considered, any out of twenty single cylinders might conceivably show the way home to the entire field.

This brings us to the question of dark horses. By the law of averages a "dark horse" win is bound to occur some day. In every other sport it is a common occurrence for some aspirant unknown to fame suddenly to leap into prominence by defeating all the famous experts, and it must be admitted that the conditions are exceptionally favourable to a surprise in the current year or the next two or three races.

A New Army of Speed Merchants.

Motor cycle sprint work has become such a wholesale business of late that quite a fleet of riders know all there is to be known about tuning up any engine one cares to name, and the huge popularity of sprint racing has developed a positive army of crack speed

ourist Trophy Topics.—

erchants. It would not be at all surprising if some bsolute new-comer evinced in the race that rare ompound of mechanical *savoir faire*, of restraint, nd of devil that makes a champion, while increased xperience may have caused one of last year's second-aters to develop his powers far more rapidly than e general public suspects. Further, the course is of nature that is sure to introduce one or two vital ctors. Practice is all very well, but in the pre-minary work few men will manage to cover several ps at racing speed without an easy.

More than one engine which in practice has picked above the Snaefell hairpins after one lap or two ps, or has lasted out a strenuous hour on Brook-nds, will betray its rider on the third, fourth, or th lap.

The Ascent of Snaefell.

Riders who have never visited the island cannot agine what a tax the ascent of Snaefell involves er three or four laps at 50 m.p.h. Right at the ttom comes a wicked hairpin bend, of such a kind at nine inexperienced tourists out of ten encountering unawares for the first time would stop their engines. mediately above it come two or three miles of erably strenuous climbing, and just when a hot gine runs its best chance of being done to the world mes another awful twist, the ill-famed "Gooseneck," ove which there remains just sufficient bad gradient make picking up impossible to any engine that is t "just so."

It is possible that those who survive till the fifth will all make light of their last climb. It is also ssible that the two or three leading machines will peter out at this point within sight of victory, and t the machine standing fourth or fifth will come in itself to win.

Again we must take into account the possibility of idents at corners which are likely to eliminate the kless brigade as regularly as Glen Helen and Ballacraine have done in the past. The new chances of smashes are mostly concerned with the way in which the men string out. In past years the same little clumps have circled round and round the shorter lap within close touch of each other for hours; and it is quite conceivable there will be a good deal of "clumping" even on the 37½ miles lap in use this year.

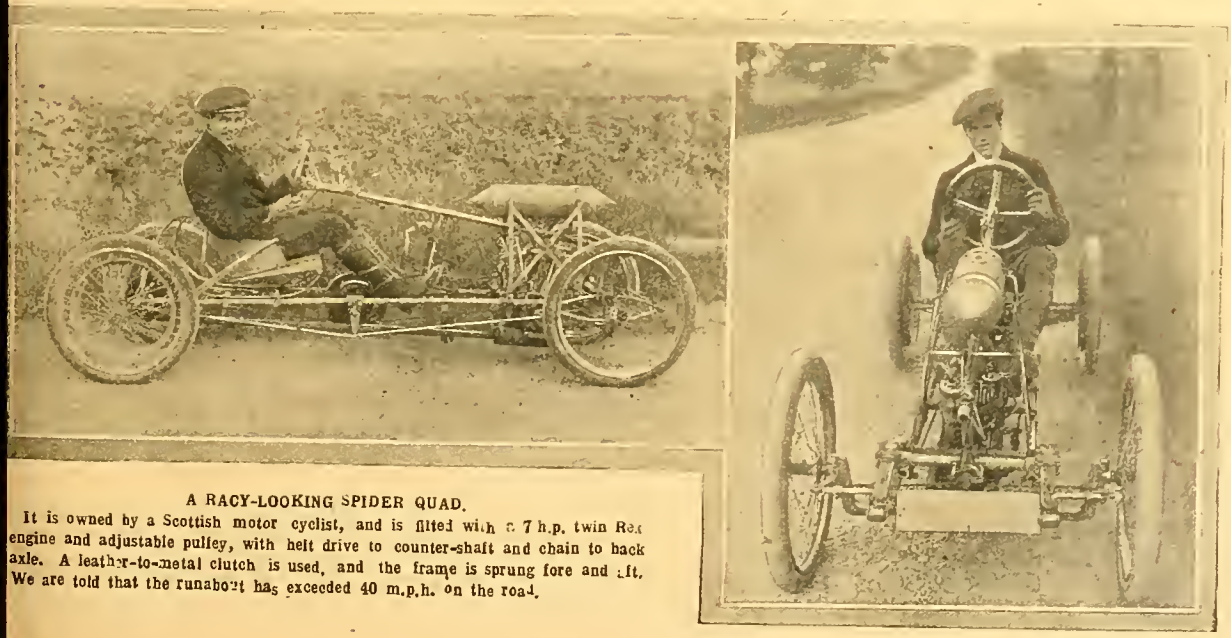
It is fervently to be hoped that the men will string out early, and that the stringing will continue throughout the race. The promoters relied on this to some extent in selecting the course. Every rider will want all the road to himself at several points; first of all, at the Ramsey hairpin, which commences the mountain climb; secondly, at the top bend or "Gooseneck" on the concluding steep bit of Snaefell. Next, racing abreast and overtaking will be dangerous on the three or four miles between the "Gooseneck" and the Bungalow where the road is narrow.

Downhill to Douglas.

Next comes the sheer drop down to Douglas, consisting of a downhill race on steeply falling gradient along a narrowish lane between high hedges. The drop includes several awkward bends, and at the bottom hard braking will be essential. Its steepness can be gathered from the fact that one rider at least proposes to race down here on free engine by gravity alone, and expects to travel as fast as anybody. The speeds here will be terrific.

The reckless brigade will be a grave source of danger till remorseless fortune has eliminated them. There will be much skidding as the brakes are applied at the bends and towards the foot, even if the road be dry; if the Manx grease be out, no one knows what will be done or whether it will be possible to hold the race should bad weather prevail. All this tends to increase the possibility of a dark horse winning outright. But considering the general high level of the machines concerned, and the number of first rate riders engaged, a victory by one of the old stagers is intrinsically more probable.

MICHAEL KIRK.



A RACY-LOOKING SPIDER QUAD.

It is owned by a Scottish motor cyclist, and is fitted with a 7 h.p. twin Rex engine and adjustable pulley, with belt drive to counter-shaft and chain to back axle. A leather-to-metal clutch is used, and the frame is sprung fore and aft. We are told that the runabout has exceeded 40 m.p.h. on the road.

The International Tourist Trophy Races.

Complete List of Entries and order of Starting.

There are 67 entrants for the Senior T.T. and 37 in the Junior Race. The complete list is given hereunder, together with details of the competitors' machines.

Entries for Senior Race.

Order of starting.	Rider and machine.	No. of cyls.	Bore and stroke.	c.c.
1.	C. R. Collier (Matchless) ...	2	76 ×64	580
2.	H. Rem Fowler (3½ Ariel) ...	1	86.4×85	498
*3.	Quentin Smith (3½ Triumph) ...	1	85 ×88	499
4.	B. V. Jones (3½ Premier) ...	1	85 ×88	499
5.	S. C. Perryman (3½ Ariel) ...	1	86.4×85	499
*6.	H. Houghton (3½ Rudge) ...	1	85 ×88	499
7.	H. A. Collier (4 Matchless) ...	2	76 ×64	580
8.	V. J. Surridge (3½ Rudge) ...	1	85 ×88	499
*9.	E. V. Stevens (3½ Dot)	1		
10.	F. G. Edmond (3½ Premier) ...	1	85 ×88	499
*11.	Howard Smith (3½ Triumph) ...	1	85 ×88	499
12.	F. A. Applebee (5 Scott) ...	2		
14.	H. Reed (4 Dot)	2		
15.	W. F. Newsome (3½ Triumph) ...	1	85 ×88	499
*16.	W. E. Grange (3½ Bradbury) ...	1	85 ×88	499
17.	C. B. Franklin (3¾ Indian) ...	2	70 ×76	584
18.	A. V. Sumner (3½ Ariel) ...	1	86.4×85	498
19.	Jack Woodhouse (3½ Ivy-Precision)	1	90 ×77.5	496
*20.	C. E. Murphy (3½ Triumph) ...	1	85 ×88	499
*21.	J. A. Carvill (3½ Triumph) ...	1	85 ×88	499
*22.	H. H. Bowen (4 Bat)	2	76 ×64	580
*23.	Robert Nixon (4 Matchless) ...	2	76 ×64	580
24.	Eric Myers (5 Scott)	2		
*25.	Vernon Taylor (3½ Rudge) ...	1	85 ×88	499
26.	O. C. Godfrey (3¾ Indian) ...	2	70 ×76	584
27.	F. W. Barnes (3½ Zenith-Gradua)	1	85.5×85	488
28.	John Gibson (3½ Rudge)	1	85 ×88	499
*29.	W. Johnson (4 Matchless) ...	2	76 ×64	580
30.	W. Creyton (3½ Triumph) ...	1	85 ×88	499
*31.	A. J. Woodhouse (3¾ Indian) ...	2	70 ×76	584
32.	Boldt (N.S.U.)	1	85 ×88	499
33.	P. Weatherilt (3½ Zenith-Gradua)	1	85.5×85	488
*34.	J. Prendergast (3½ Rudge) ...	1	85 ×88	499
35.	Gassert (N.S.U.)	1	85 ×88	499
36.	Jas. L. Norton (3½ Norton) ...	1	76 ×100	454
37.	Drechsler (N.S.U.)	1	85 ×88	499
38.	C. G. Garrard (4 Blumfield) ...	2	67 ×83	583
39.	Frank Philipp (5 Scott)	2		
*40.	Percy Butler (4 Dot)	2	80 ×58	582
41.	J. H. Slaughter (3½ L.M.C.) ...	1	85 ×88	499
*42.	John Lang (4 Matchless) ...	2	76 ×64	580
43.	Jake De Rosier (3¾ Indian) ...	2	70 ×76	584
44.	J. Healy (3½ Rudge)	1	85 ×88	499
45.	F. C. North (3½ Ariel)	1	86 ×85	498
*46.	W H. Bashall (4 Bat)	2	76 ×64	580
*47.	W. H. Elce (3½ Rudge)	1	85 ×88	499
48.	P. Brewster (3½ Norton) ...	1	79 ×100	490
*49.	J. T. Bashall (4 Bat)	2	76 ×64	580
*50.	J. W. Adamson (3½ Triumph) ...	1	85 ×88	499
51.	—— (Moto-Rêve)	2		
*52.	W. Stanhope Spencer (3½ Rudge)	1	85 ×88	499
53.	A. H. Alexander (Rex) ...	1	84.5×89	499
54.	Hugh Mason (4 Matchless) ...	2	76 ×64	580
*55.	J. R. Alexander, jun. (3¾ Indian)	2	70 ×76	584
56.	T. L. Rankin (3½ Singer)	1	85 ×88	499
57.	Harry Martin (3½ Singer) ...	1	85 ×88	499
*58.	J. R. Haswell (3½ Triumph) ...	1	85 ×88	499
59.	W. L. T. Rhys (4 Bat)	2	76 ×64	580
60.	R. Lord (3½ Rex)	1	84.5×89	499
61.	F. Maclean (3½ Singer)	1	85 ×88	499
62.	Norman F. Holder (4 Blumfield)	2	67 ×83	583
*63.	H. Lister Cooper (3½ Triumph) ...	1	85 ×88	499
64.	A. J. Sproston (3½ Rudge) ...	1	85 ×88	499
*65.	G. Fenton (3½ Zenith-Gradua)...	1	85 ×85	482
*66.	F. P. Johnson (4 Matchless) ...	2	76 ×64	580
67.	G. E. Stanley (3½ Singer) ...	1	85 ×88	499
68.	B. Plews (3½ Calthorpe)	1	90 ×78½	496

Entries for Junior Race.

Order of starting.	Rider and machine.	No. of cyls.	Bore and stroke.	c.
*1.	Hugh Gibson (2¾ New Hudson) ...	1	76 ×65.5	297
2.	J. Haslam (2¾ Zenith-Gradua) ...	1	76 ×65.5	297
3.	W. Heaton (N.S.U.)	1		
4.	G. E. Stanley (2½ Singer) ...	1	69 ×79	2
5.	Gassert (N.S.U.)	2	53.6×75	3
6.	François Sain (2 Alcyon) ...	1		2
7.	H. V. Colver (2¾ Enfield) ...	2	54 ×74	3
8.	Michel Canale (Alcyon)	1		2
9.	H. Rem Fowler (2¾ New Hudson)	1	76 ×65.5	2
*10.	F. Percy Johnson (2¾ Humber) ...	2	60 ×60	3
*11.	David C. Bolton (2 Martin) ...	1	76 ×60	2
12.	Sam Wright (2¾ Humber) ...	2	60 ×60	3
14.	H. G. Dixon (2¾ New Hudson)	1	76 ×65.5	2
15.	H. A. Collier (2 Matchless) ...	1	76 ×65.5	2
16.	A. H. Alexander (2¾ Rex) ...	2	60 ×60	3
17.	P. J. Evans (2¾ Humber) ...	2	60 ×60	3
18.	W. W. Douglas (2¾ Douglas) ...	2	60 ×60	3
19.	Harry Martin (2 Martin) ...	1	76 ×65.5	2
20.	J. Garbero (Alcyon)	1		2
21.	F. W. Barnes (2¾ Zenith-Gradua)	1	76 ×65.5	2
22.	S. T. Tessier (2¾ Bat)	1	76 ×65.5	2
23.	A. G. Fenn (2¾ Humber) ...	2	60 ×60	3
24.	D. Brown (2¾ Humber)	2	60 ×60	3
*25.	E. Kickham (2¾ Douglas) ...	2	60 ×60	3
*26.	Harold J. Cox (2¾ Forward) ...	2	56 ×69	3
27.	Drechsler (N.S.U.)	1	69.8×78	2
*28.	J. D. Cooke (2½ A.J.S.) ...	1	70 ×77.5	2
29.	Baldt (N.S.U.)	1	69.8×78	2
*30.	V. Wilberforce (2½ N.L.G.) ...	1	76 ×65.5	2
31.	G. L. Fletcher (2¾ Douglas) ...	2	60 ×60	3
32.	C. R. Collier (2 Matchless) ...	1	76 ×65.5	2
33.	A. J. Stevens (2½ A.J.S.) ...	1	70 ×77.5	2
*34.	Geo. Wray (2¾ Humber) ...	2	60 ×60	3
35.	R. J. Bell (2 Moto-Rêve)	1		2
36.	H. Greaves (2¾ Enfield) ...	2	54 ×74	3
37.	G. Griffiths (2¾ Moto-Reve) ...	2	52 ×80	3
38.	J. F. Sirett (N.S.U.)	2	53.6×75	3

*Denotes private owner.

STEAMER SAILINGS TO THE ISLE OF MAN.

The following particulars of sailings from Liverpool to t Isle of Man and back have been issued by the Isle of M Steam Packet Co. The rates for the carriage of motor cycl accompanied by passenger are: Motor bicycle—2s. 6d., wi sidecar 5s.; tricycle—one seat 5s., two seats 7s. Tickets f these are purchased at the booking office alongside t steamer. Petrol tanks must, of course, be emptied befo going on board:

FROM LIVERPOOL.

JUNE.

22nd.—10.30 a.m.; 2.45 p.m.; 12.50 night.
23rd.—10.30 a.m.; 2.45 p.m.; 12.50 night.
24th.—10.30 a.m.; 2.45 p.m.; 5.30 p.m.; 12.50 night.
26th.—10.30 a.m.; 2.45 p.m.
27th.—10.30 a.m.; 2.45 p.m.
28th.—10.30 a.m.; 2.45 p.m.; 12.50 night.*
29th.—10.30 a.m.; 2.45 p.m.; 12.50 night.*
30th.—10.30 a.m.; 2.45 p.m.; 12. night.

JULY.

1st.—9.45 a.m.; 10.30 a.m.; 2. p.m.; 5.30 p.m.; 12. night
3rd.—1 a.m. (Sunday night); 10. a.m.; 2.45 p.m.; 12 night
4th.—10.30 a.m.; 2.45 p.m.; night.*

FROM DOUGLAS.

JUNE.

22nd.—9 a.m.; 4 p.m.; 6 p.m.
23rd.—9 a.m.; 4 p.m.
24th.—9 a.m.; 4 p.m.
26th.—12.30 a.m. (Sunday night); 9 a.m.; 4 p.m.
27th.—9 a.m.; 4 p.m.
28th.—9 a.m.; 4 p.m.
29th.—9 a.m.; 4 p.m.; 12.30 night
30th.—9 a.m.; 4 p.m.; 12.30 night

JULY.

1st.—9 a.m.; 4 p.m.; 12.30 nigh
3rd.—12.30 a.m. (Sunday night 9 a.m.; 4 p.m.; 12 night
4th.—9 a.m.; 4 p.m.; 12 night

* Passengers and cargo steamers.

Fleetwood and Douglas.—From Fleetwood: Every week day, 10.30 a.m. From Douglas: Every week-day, 4 p.m.

Extra Services.—Fridays, Saturdays, and Mondays, com mencing June 30th: From Fleetwood, after arrival through trains due about 3.30 p.m. From Douglas, 8.3 a.m.

TOURIST TROPHY NOTES.

Brief Pars of Interest. Details of new T.T. Mounts and Fittings.

e entry list No. 13 has been
The following additional prizes
ounced : Senior Race—1st, £40;
5; 3rd, £10. Junior Race—1st,
nd, £20; 3rd, £10. Gold medals
awarded to the riders of those
s which finish within forty-five
of the winner's net time.
lica of the existing trophy has
ade, and will be presented to the
f the Junior race.
question which is puzzling all
d in the T.T. Races is, "Will
e-speed geared machine win the
s year?" Last year the question
Will a chain-driven machine
and the year before the burning
Will a single-cylinder machine
at all the twins?"
Rudge T.T. machines, nine of
re represented in the race, follow
lines very closely, the differ-
the eye being the large tank with
he machines are fitted. These
capacity of 2¼ gallons, and the
is of enormous size.
sing on the course commenced
ursday morning, and quite a
were out on the first morning,
g Trimmph, Rudge, and Indian
The course is generally agreed
difficult one.
Rudge representatives finally
upon are V. J. Surridge and J.
he Irishman.
ets favour a twin-cylinder victory
Senior Race, and a single-cylinder
in the Junior T.T.
t for engine dimensions the Bat
s which have been entered for
. Races are exactly the same as
hich performed so notably in last
ice. The engine is a twin J.A.P.
bore and stroke of 76 × 64 mm.
rely, has overhead valves, and is
a J.A.P. automatic carburetter.
ch magneto is placed in front of
ine and is driven by chain in
istinction to the touring model,
as a gear-driven magneto in a
ment of the petrol tank. The
on is accomplished by pump
his being placed in a horizontal
on the top of the oil tank and
glass sides.
ightweight model has a J.A.P.
with a bore and stroke of 76 ×
and overhead valves, and differs
lly only in the power plant from
or machine. It is not yet decided
oy a change-speed gear on the
ght, but if its introduction is
o be necessary an Armstrong
three-speed hub will be used.
f the Senior machines will pro-
njoy the distinction of having
ne the severest trial of any
in the race, as it was on the
March, and has since figured in
er of events.
medical men who may be present
ss the Tourist Trophy Races who
e willing to render assistance, if
, should report themselves to the
f the course, Mr. J. R. Nisbet,
Hotel, Douglas, when they will
ted special positions on the route.

T. T. Nortons.

On the Nortons to be ridden by J. L. Norton and P. Brewster Druid spring forks are used, which differ from the standard pattern, as the links are so set as to be exactly at right angles to the line of thrust from such shocks as are encountered. This arrangement, together with the facts that the rake has been very carefully set out and springs of suitable compression carefully chosen for racing work, makes the forks ride extremely easily at high speeds, and Mr. Norton informs us that he finds the strain of steering when going fast over rough roads reduced to a minimum. A wide and shallow tank is used, which holds one and threequarter gallons of petrol and about half a gallon of oil. The latter is fed to the engine through an ordinary plunger pump and also through an auxiliary drip feed lubricator worked by the partial vacuum in the crank chamber.

New B. and B. Carburetter.

The latest carburetter which has recently been introduced by Messrs. Brown and Barlow is on lines which are quite distinct from anything that has yet been turned out by this firm, but the instrument itself is to all appearances scarcely distinguishable from the usual B. and B. It has been selected by a number of T.T. riders. The principal feature of the instrument, a sketch of which is given in fig. 1, is the adjustable jet, which is shown in more detail in fig. 2. The base of the car-

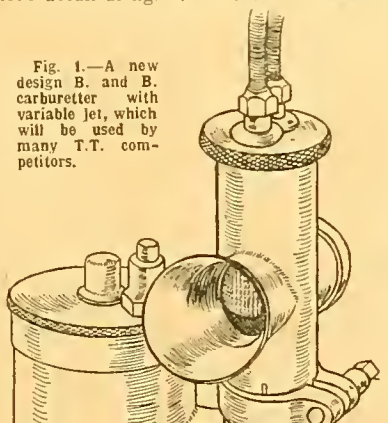


Fig. 1.—A new design B. and B. carburetter with variable jet, which will be used by many T.T. competitors.

buretter body is a cylindrical piece of solid metal containing a semi-circular ring of fixed air holes which emerge into a crescent shaped open slot. The cylindrical body also contains a jet, which is formed by drilling down the metal in the same way as the air holes. The size of the jet can be adjusted from the outside by a circular cap which has an eccentric spindle, and which, when turned round, either uncovers or covers up a portion of the jet orifice as the case may be. This is accomplished by means of a milled thumb nut, which is furnished with a groove which can be brought against one or other of the graduations marked on the carburetter body. The sharp edge of the jet cap in conjunction with the cylindrical

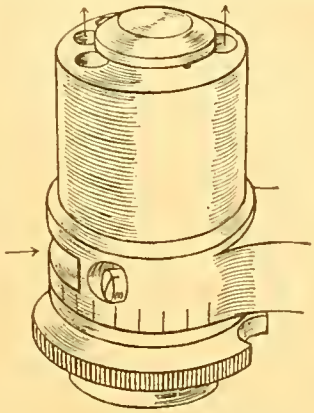


Fig. 2.—The B. and B. variable jet adjustable from the outside.

bore of the jet itself produces a particularly effective spray as the petrol stream is very abruptly broken up.

This jet arrangement lends itself admirably to the provision of a variable choke tube effect, which is very simply obtained by using the slide which covers and uncovers the throttle orifice for this purpose. When the throttle is almost closed the base of the slide is close down directly over the jet, and all the air drawn in is therefore taken past the jet at a high velocity. The result of this is an approximately correct mixture at all speeds, which, it should be noticed, does not require a constant alteration in adjustment of the air slide. To a certain extent the carburetter is, therefore, automatic; at all events considerably more so than the usual type. At the same time, the air lever allows circumstances to be met and overcome which would otherwise perhaps be beyond the range of a purely automatic carburetter.

The instrument, it need hardly be said, is up to the usual B. and B. standard of excellence in workmanship and finish.

The Lloyd T.T. Models.

The T.T. L.M.C. is a departure from ordinary standard practice. The principal feature is undoubtedly the new two-speed gear, which has been specially designed for the purpose of being tried out thoroughly in the race, and we do not doubt will figure prominently on future L.M.C. models. The Lloyd gear differs from most of the T.T. gears in being mounted upon the engine-shaft outside of the belt pulley, and it is so short and stubby, and also so light, that there is no need for the provision of extra bearings to support the overhang. It works on the ordinary epicyclic principle, and comprises three star pinions. A specially notable point is its small size; it measures only 5in. in diameter, with a width of 3½in., this being the result of connecting the gear directly to the engine-shaft, and using small light pinions.

Occasional Comment

By Ixion

Road Dangers.

I was glad to see a correspondent calling attention to the number of tipsy cyclists about at holiday times. Many narrow escapes have convinced me that it pays to scan approaching cyclists rather closely at festive seasons, and in general to be prepared for any on-coming traffic to do foolish things whenever the least excuse exists for potations.

Here are some examples: Last Easter I encountered the home-going traffic after a small steeplechasing meet, when about half the trap drivers and cyclists were irresponsible. Later in the season I met the stream of mixed traffic emerging from an agricultural exhibition; again most of the drivers were three sheets in the wind. At Whitsun I narrowly escaped colliding with half a dozen thirsty cyclists who wobbled across as I drew close to them.

About two years ago I was driving a tricar by lamplight when I suddenly saw a dark object under my front wheels. Pulling up I found I had run over a riderless push-bicycle, which had been left lying in the centre of the road. Its inebriated Jehu was snoring stertorously on the bank. It is not only drunken humans who make the road perilous. Only last week I had two narrow shaves. I was riding from Buxton to Ashbourne, and while scrapping over the moors saw what looked like a bough of a tree in the road. At the last moment it turned out to be a scythe blade, and I just avoided it by a violent swerve.

Within five miles I met a solitary cow. At least I thought it was a cow until I got fairly close up, when it put its head down and its tail up, advancing the spark rather freely meanwhile. Noticing a broken chain depending from its nostril, I slid my machine into the ditch at an acute angle, and skipped over the wall with some celerity. The bull luckily neither charged my machine nor gored the tank. It retarded the spark, trotted majestically up to my recumbent bicycle, smelt it, and then proceeded on towards Buxton in stately fashion.

Firmax as a Puncture Sealer.

The above-named preparation was recommended by several correspondents when I drew attention to the pinhole puncture bogey, and I instantly used it in a pair of tyres without troubling to patch three small punctures existing in the rear tube. After inflating the tube, which prior to inserting Firmax would not remain "up" for half an hour, I drove the machine sixty miles at high speed; it was board hard when I finished the run, but was flat next morning. I pumped it up again without repairing the holes, and after another drive of sixty miles it was still hard. I then left the machine standing for five days, after which the tube was again flat.

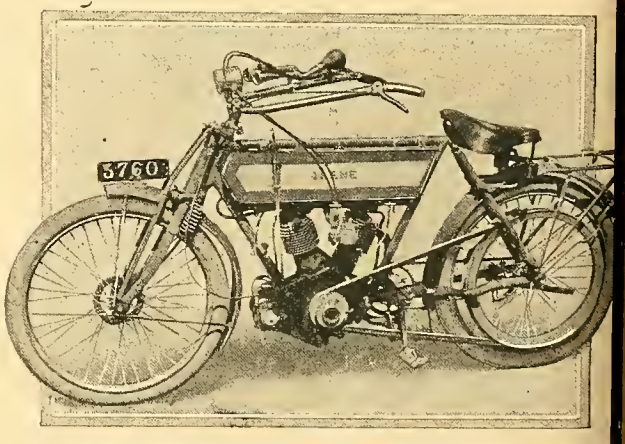
After reinflating I drove 168 miles, spread out over a period of twenty-six hours, at the end of which the tube was still board hard. Evidently Firmax entirely obviates the need for immediately repairing small punctures. The holes are partially sealed as soon they are made, and the sealing becomes more perfe as time elapses. I see no reason why this particul sealer should interfere with the adhesion of patche as it consists of a dry powder, and is not a glutino semi-liquid, like many of its ill-famed predecesso But doubtless before long I shall enjoy practical e perience of its merits in this direction, as also of usefulness in the case of larger holes. I am strong inclined to think Firmax will prove to be a real bo to us all.

Patching versus Vulcanising.

Riders who value their air-tubes should not rega even the best patches as affording a permanent repa of a motor cycle tube. As soon as a convenient occ sion arrives the patch affixed by the roadside shou be removed, and the tube should be properly repair by vulcanising the patch. This was brought strong home to me the other day when I overhauled m stock of odd tubes in search of a spare to carry an important run. I came across an apparently sou tube, decorated with half a dozen patches, and fingering the patched portions it was evident all w not well beneath them.

On soaking off the patches it became quite cle that the tube would soon have burst. It had acco plished a fairish mileage with the patches *in si* and on removing the patches I found that the h under each patch had become considerably enlarg The rubber surrounding each hole had ripped a torn in every direction, and the bit of each pat immediately over each hole was chafed and thin. T tube was airtight under a water test, but was ab lutely unfit for further use until it was vulcanised.

A little work with a vulcaniser restored each h to its pristine strength, when insertions of solid rubb had been intimately welded into the fibres of the tu The same advice applies even more strongly to tu used for passenger work if the maximum life of t tube is a matter of importance to the user.



"Irene" motor cycle, one of the few makes assembled in Australia. This interes ing machine has a 7 h.p. twin-cylinder N.S.U. engine and Chater Lea parts.

AWARDS IN THE LONDON-EDINBURGH RUN.

e M.C.C. Committee passed the following awards at its ing last week.

INNER OF M.C.C. CHALLENGE CUP.—G. Brough (3½ gh); total error in punctuality, 5m. 44s. This is the d year in succession that he has won this trophy.

COND FOR CUP.—Eli Clark (2¾ Douglas); total error, 5s.

IRD FOR CUP.—P. Shaw (3½ P. and M.); total error, 30s.

CIAL GOLD MEDALS FOR THE DOUBLE JOURNEY, out and :

. Hill (3½ Rudge)
Bailey (3½ Rudge)
umner (3½ Ariel)
. Woodhouse (3½ Meadeeision)
. Fletcher (2¾ Douglas)
H. Cooper (3½ Bradbury)
V. Applebee (3½ N.S.U.)
. LeGrand (5 Rex)
A. Jacobs (5 Rex)
White (7 Rex)
. Gray (3½ Rudge)
. North (3½ Ariel)
Boswell (3½ Ariel)
F. Guiver (3½ Kerry-ingdon)
W. C. Hemy (3 Wanderer)
W. B. Gibb (2¾ Douglas)
E. Kickham (2¾ Douglas)
R. Ellis (3½ B.S.A.)
R. Croucher (3½ Kerry-Abingdon)
S. Webb (3½ Bradbury)
C. S. Burney (3½ Rudge)
G. A. Reed (3⅜ Scott)
G. Purchase (3½ Triumph)
J. Holroyd (1¾ Motosacoche)
W. H. O. Elce (3½ Rudge)
R. C. Owen-Wells (3½ Bradbury)
J. L. Love (3½ Triumph)
R. G. Mundy (3½ Triumph)

SIDECARS, ETC.

S. Morgan (Morgan nabout)
roctor (7 Indian and sc.)
F. Smith (5-6 Clyno and sc.)
E. B. Ware (8 Chater-Lea and sc.)

LD MEDALS for outward journey only:

MOTOR CYCLE CLASS.

y G. Bell (5-6 F.N.)
Baddeley (4½ Baddeley)
. Baddeley (6 Baddeley)
. Flint (3½ Zenith)
. Watson (5-6 F.N.)
May (5 Portland-Jap)
B. Clark (5 Indian)
Cherry (3½ Rover)
M. Brice (3½ Brown)
Harians (3½ P. and M.)
Karslake (4 Dreadnought)
R. R. Arbuthnot, R.N. Triumph)
H. C. Scott (3½ Rudge)
. Wasling (2¾ Enfield)
Atkinson (4 Cheviot)
Peacock (4 N.L.G.)
Griffith (2¾ M.R.)
England (2¾ M.R.)
V. Smith (3½ Ariel)
Roy Walker (2½ N. Hudson)
A. C. Robins (3½ Humber)
J. P. Begg (2¾ Moto-Rêve)
F. Mussell (7 Rex)
S. Sawer (3½ Premier)
F. Taylor, jun. (7 Indian)
H. C. Maybury (3½ H.A.L.)
F. Gibbons (3½ Triumph)
G. A. E. Ward (3½ Arno)
P. Bentley (3½ Triumph)
C. S. Lake (2¾ Arno)
M. Duke (3½ Triumph)
E. Pond (3½ Rudge)
E. B. Dickson (8 Bat)
V. Olsson (8 Oxted-Jap)
G. E. Higgs (3½ Triumph)
J. R. Brown (3½ Lincoln Elk)
H. R. Whitmore (3½ Rudge)
P. Grout (2¾ Douglas)
F. Watson (3½ Triumph)

MOTOR CYCLE CLASS *(continued)*.

A. Webster (3½ Hobart)
G. W. Raper (6 N.S.U.)
G. Stevens (2½ A.J.S.)
A. J. Stevens (2½ A.J.S.)
A. Mabon (3½ Rudge)
S. T. Tessier (5 Bat)
W. Price (5 Rex)
H. E. Davison (5 Rex)
J. Culley (3½ Triumph)
C. E. Lovett (3½ Bat)
J. Haslam (6 Zenith-Gradua)
H. V. Swift (2¾ Douglas)
N. D. Slatter (2 Alcyon)
A. J. Duncan (3½ Rex)
O. C. Godfrey (7 Indian)
J. De Rosier (7 Indian)

George Brough and the new 6 h.p. twin-cylinder Brough. The engine is of the V type and has side-by-side valves. The bore and stroke are 80 × 85 mm. Brough is the winner of the M.C.C. challenge cup in the London-Edinburgh run for the second year in succession.

SIDECAR CLASS.

A. Clayton (3½ Humber & sc.)
G. Lee Evans (7 Indian & sc.)
A. Catt (3½ Triumph & sc.)
H. Gibson (3½ Bradbury & sc.)
G. Wray (3½ Bradbury & sc.)
J. Steinberg (3⅜ Scott & sc.)
John Godsal (6-7 Bat & sc.)
C. Percival (6 Zenith and sc.)
W. G. Haines (8 Bat & sc.)
J. Chater-Lea (8 Chater-Lea & sc.)
F. Thomas (7 G.O.K. & sc.)

SILVER MEDAL WINNER.—W. Hornsby (4 Cheviot).

Competitors and members of the Westmorland M.C.C. after the President's Trophy Hill-climb at Orton Scar.

THE SPIDER QUAD.

A reply to "Car Designer."

"CAR Designer" has undoubtedly raised many weighty points, and I agree with him that the future of these vehicles is distinctly problematical—in fact, my first article plainly said as much—but I think I am a trifle more hopeful than he is. He raises one or two points to which I desire to make brief replies.

The appearance difficulty is already solved. The majority of the twenty odd spider quads and bucket-seated tricycles now on the road have distinctly taking aspects; and their outlines are not pure car outlines, but are partly original, and involve no great expenditure.

Old and New Methods of Production.

Secondly, the cost question is being brainily tackled. It was sadly muddled in the old tricar days. Each detail fitting was specially made and very expensive. For instance, if a tricar designer used a gear box, he manufactured a special quadrant and lever, and as perhaps only fifty or a hundred were made, they were made by hand, and their cost was extraordinarily high. The same applied to possibly several hundred similar details.

The designers of the new spiders are working on very different lines. Here are a couple of instances culled at random from a hundred little cost and labour-saving notions which have caught my eye this year. The first is a gear changing lever. On the machine I have in mind there is in reality neither lever nor quadrant. The fork which protrudes from the top of the gear box would in standard car or tricar practice be the first unit in a complicated series of brackets, rods, joints, and levers, terminating in a long lever with a plated knob, a spring trigger, a ratchet, and a quadrant. On the machine in question the gear is so placed that the fork on its lid is within reach of the driver's hand, and an attachment cos only a few pence to manufacture provides a loc device.

The other notion has to do with the seating. old tricar makers imitated the car designers, and to a coach-building firm with an order for minia coach-built buckets. The spider designer uses a ch pan seat, and makes it as cosy as any costly alumi bucket by simply hitching a broad back leather b strap between two short iron uprights. Similar and labour and cost saving devices are incorpor by the dozen into the b spiders; and their tot represents an economy which utterly transforms problem. The 1911 spider designer can give the tricar designer points in cost saving—hence his prospect of some permanent success.

Comparisons of Cost and Weight.

The third point of the competition from the sec hand car market is more serious, and the sp designer's hope is found in the difference of upk When all is said and done, a well-made simple sp should be much cheaper to run than a 6 h.p. or 8 car, which may weigh anything from two and a to three times as much. Users appreciate this p strongly. Here is the proof—the A.C. tricar considerably more than £70, but for several y past it has won and still holds a good market in teeth of the second-hand car market. A new car should be a better selling attraction than a sec hand car; and with the added attraction of che upkeep, it has a good sporting chance of finding own niche in the industry.

B. H. DAVIE

THE END-TO-END RECORD.

THAT most intrepid of End-to-end record-breakers, Ivan B. Hart Davies, called upon us last Thursday, looking extremely fit and well after his strenuous ride of 886 miles from John-o'-Groat's to Land's End in 29 hours 12 minutes, the announcement of which appeared in our last issue. His lips were slightly blistered and his wrist was wrapped up, otherwise he looked as well as ever.

In the course of conversation he gave us a few particulars concerning the performance. First his Triumph was sealed at Wick by J. Robertson of that town, who sent a *fac simile* of the seal to Holman and Sons, Penzance, and also timed him away from John-o'-Groat's, the watch being set accurately to Greenwich time and compared again a day later. The check at Land's End was done by G. Priest, of Holman and Sons, in conjunction with a local watchmaker, the first named also verified the seals. The first 100 miles of the journey occupied 2½ hours, Inverness (146½ miles) being reached in 4 hours. The road over the Grampians was in bad condition, and, owing to the shocking surface, a spill occurred at Dalwhinnie which strained the rider's wrist. A Scotch culvert which was taken at speed in the early morning caused machine and rider to jump over a foot in the fortunately the front wheel landed straight, but crash broke both front fork springs. Rain fell through Scotland, and at Beattock the belt pu through and the first puncture was suffered. Car (412 miles) was passed through at 3 p.m.—tw hours after the start. Through Lancaster Preston pace was reduced, as the factory h were just leaving work.

At Bridgnorth the Premier head light was n use of, but it was a glorious moonlight night wit mist, and the lamp was only required to comply the law. Unfortunately, two more punctures at point meant some delay, although butt-ended t were carried. At Gloucester it was found that rear tyre had crept on the rim and pulled the v out, so the wheel was changed. Below Glouc the high speed for upwards of 650 miles had effects on the compression, which became poor caused an excess of petrol to be used, with the r that the main tank ran dry near Penzance and minutes were wasted in getting the petrol to flow f the spare tank on top tube. Finally the last was completed by the rider pushing his machine.

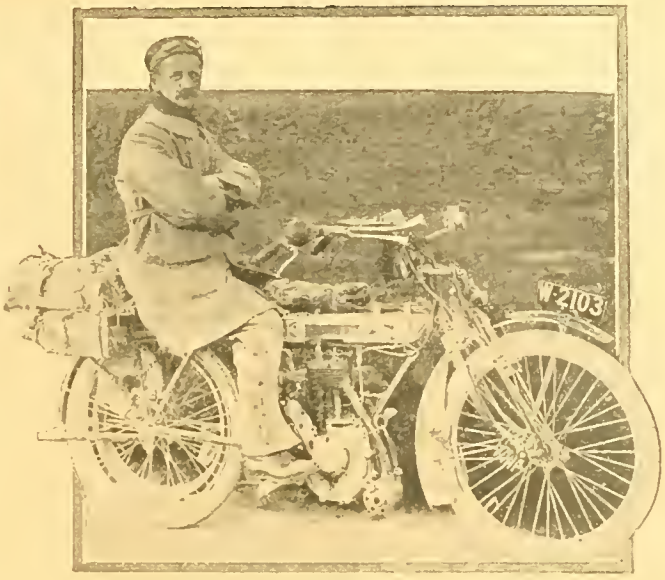
he End-to-end Record.—

The T.T. roadster Triumph, used since February ast, was equipped with Dunlop tyres, Dunlop and tanley Dermatine belts and fasteners—the tyres ehaved splendidly, and showed no cuts even after raversing the bad surface of the Grampians. The enerator used was a Lucas, magneto and plug Bosch; rice's oil and Shell spirit. Hart Davies plays cricket nd hockey, which keeps him fit when he is not riding, nd his splendid physique assists him in no small egree to accomplish his self-imposed tasks. Not the ast interesting accessory carried was a huge box rench in a leather holster for rapidly undoing axle nd brake nuts when removing the rear wheel.

Below we give the times on the route:

Monday, June 12th.		a.m.
John-o'-Groat's ...	dep.	3.0
Wauly	arr.	6.30
,, ...	dep.	6.50
Inulree	arr.	10.15
,, ...	dep.	10.30
		p.m.
Dckerbie ...	arr.	2.7
,, ...	dep.	2.17

Monday (continued).		p.m.
Wigan	arr.	6.30
,, ...	dep.	6.50
Gloucester ...	arr.	11.30
,, ...	dep.	12.0
Tuesday, June 13th.		a.m.
Okehampton ...	arr.	4.10
,, ...	dep.	4.20
Land's End ...	arr.	8.12



Fred Dover, the Coast rider, and his 3½ h.p. Premier.

THE COAST RIDE.

FRED DOVER is experiencing a most enjoyable time during the progress of his coast ride, and meeting with perfect weather. In our last issue his rider and his 3½ h.p. Premier were shown by the postcards received at the offices of *The Motor Cycle* to be in the extreme North of Scotland. The particulars of his daily rides up to and including June 14th are given below, and are from the rider's own pen.

e	Route.	Miles.	Condition of Roads.	Condition of Hills.	Condition of Machine.	Remarks.
	Liverpool to Maryport	201	Very good, except between Blackpool and Fleetwood.	A good many short steep gradients.	—	Weather perfect, lots of dust, had a good friend in Mr. Illingworth, of Millom, from Lancaster to Workington.
	Maryport to Ayr	210	Very good, little dust.	None to-day.	Pulling like one o'clock.	Two punctures and lost exhaust pipe. Scenery best I have ever seen, and I've seen Switzerland, perfect weather. Had a bathe in sea outside Girvan. Lost drain tap, engine seized, soon off again. Got lost twice. Feel fit, but lonely.
nd	Ayr to Ballachulish	202	Ayr to Inveraray (87 miles) fearful, 6 hrs. doing 70 miles, remainder fair.	Bad, several small Sutton Banks, got up Rest and be Thankful all right, 5½ to 1 gear, very loose.	No trouble to-day.	Bad roads have made me rather tired, weather cooler but fine. Rode many miles alone. Milked a cow on roadside, had real new milk, gummed a postage stamp on cow's horn.
	Ballachulish to Achnasheen	133	Very bad, 85 miles mountain track, 3in. deep stones.	Bad, Clunie Mountain almost unrideable and very steep, hills all day.	Did all climbing, geared 5 to 1.	Roads so loose came off eight times, smashed back brake. Rode 22 miles up and down hills without it; some mountain hills 3 miles long, average 1 in 6. Broke belt. Average speed, 15 m.p.h. Three hours rain. Lost way four times, went miles out.
	Kinlochewe to Ullapool	114	First 50 good, after mountain tracks, loose pebbles, and sand.	Very bad, 3 hrs. getting up Glen Brae 2 miles, 1 in 3 to 1 in 5, loose stones, 6½ to 1 gear, had to carry luggage up first.	Very good. If I could have kept on the machine could have got up Glen Brae, but came off eight or ten times.	Scores of horses on road and hundreds of sheep. Went 20 miles wrong on fearful road. Do not hesitate to say had it not been fine I could not have got along at all. The scenery is beyond my pen, and is worth a lot of trouble to see. 10.30 p.m. and daylight. Am well.
	Ullapool to Wick	110	Very bad indeed, 80 miles loose pebbles, and hardly rideable.	Very severe hills from quarter mile to 2 miles long, all loose pebbles.	Had no trouble.	I am now out of the West, and am glad of it. The roads are said by all to be the worst in Scotland. I met one, a mile long, pebbles 2in. to 3in. deep. Had eighteen tries and came off each time. Gamekeeper came and fetched donkey and rope, and was pulled up by 1 d.p. Engine would have gone up, but could not keep in saddle. 11 hrs. doing 90 miles. Better roads now.
	John-o'-Groat's to Fraserburgh	245	Very good indeed, no loose stones, very little dust, had the road almost to myself	No hills.	Not used a tool all day.	Started just before Hart-Davies at 2.30 a.m., who is out for the End-to-end record. At Berriedale my speedometer twisted up, and although I tried for an hour to put it right, could not do so. This coast is very different from the West. Small towns every fifteen miles or so, and perfectly flat. Have had a fine day, but a strong cold head wind.
	Fraserburgh to Edinburgh	194	Very good.	No hills.	Broke inlet valve.	Up to noon a bitter head wind and several hail showers, afterwards mixed sunshine and rain, and following gale. Was tempted to have a look round and go to a music-hall, being first large town for ten days. Rather tired of riding alone.
	Edinburgh to Sunderland	139	Very good, except about 5 miles north of North Shields.	No hills.	Pulling well, very dirty outside, not cleaned it yet, changing back tyre to-morrow.	Easy day. Left Edinburgh 2.30 p.m. E. V. Young, Morpeth M.C.C., picked me up near Alnwick, and rode with me 40 miles, entertained me to tea at Morpeth right royally, and helped with puncture. No trouble all day, except the puncture. Weather very fine and cool, following wind. Keep very fit.

A paragraph mentioning the rider's position on the English coast early this week and describing any exceptional incident will be found in our Current Chat [illegible].

M.C.C. TEAM TRIAL.

List of Competing Teams. The Contest is Described on our Centre Pages.

Birmingham M.C.C.

R. W. Duke (3½ Zenith-Gradna)
J. L. Norton (3½ Norton)
P. J. Evans (3½ Humber)
H. D. Jones (3½ Zenith)
S. C. Perryman (3½ Ariel)
Dr. Pawcett (8 Chater-Lea-Jap and sc.)

Reserves: W. H. Eggington (6 Zenith and sc.) and A. M. Lomax (3½ B.S.A.)

Bristol B. and M.C.

W. W. Douglas (2¾ Douglas)
E. Clarke (2¾ Douglas)
P. C. Wasley (2¾ Douglas)
P. Phillips (2¾ Douglas)
E. Kickham (2¾ Douglas)
P. Grout (8 Chater-Lea and sc.)

Reserves: M. B. Grace (3½ Rudge) and E. J. Prosser (5 Rex and sc.)

Coventry and Warwickshire Motor Club.

Geoffrey Smith (3½ Triumph)
G. E. Roberts (3½ Rex)
A. Elson (3½ Triumph)
S. Wright (3½ Humber)
B. Yates (3½ Humber)
C. T. Lloyd (5 Rex and sc.)

Reserves: E. A. Isherwood (3½ Triumph) and A. C. Riley (3½ Triumph).

Derby and District M.C.C.

E. J. Boissier (3½ H. and M.)
A. Ainsworth (3½ Rudge)
H. Baker (3½ Triumph)
V. Clarke (3½ Bradbury)
A. Mitcham (3½ H. and M.)
A. B. Bennett (5 Rex and sc.)

Reserves: J. W. Cox (3½ P. and M.) and E. Horton (3½ Horton).

Essex Motor Club.

L. W. Bellinger (5 Indian)
R. M. Brice (3½ Brown)
B. A. Hill (3½ Rudge)
W. Pratt (3½ P. and M.)
J. C. Sweet (3½ Rex)
E. Lewis (7 Peugeot and sc.)

Reserve: W. C. Hemy (3 Wanderer).

Herts County A. and Ae.C. M.C. Section.

C. C. Cooke (3½ Triumph)
E. A. Colliver (3½ Zenith)
W. Cooper (3½ Bradbury)
C. Down (2½ Royal Enfield)
P. H. Hardy (5 V.S.)
F. Mussell (5 Rex and sc.)

Reserves: E. S. Lee (3½ Triumph) and J. A. Gutteridge (3½ Triumph).

Leicester and District M.C.C.

A. L. Barker (3½ Clyde)
F. C. Poecher (3½ Triumph)
C. Bailey (3½ Rudge)
H. Petty (3½ Rex)
W. Edwards (3½ Rex).
J. Findley (8 Bat and sc.)

Reserves: T. Ledham (3½ Clyde) and G. W. Hillyard (6 Zenith and sc.)

Manchester M.C.C.

Harry Reed (3½ Dot)
Wm. Heaton (2½ A.J.S.)
C. E. Kettle (3½ Bradbury)
E. V. Stevens (3½ Dot-Jap)
G. Castagnoli (3½ L.M.C.)
W. Houghton (3½ Bradbury and sc.)

Reserves: Fritz Sumner (3½ Triumph) and H. J. Scale, jun. (3½ J.A.P.)

The M.C.C.

L. A. Baddeley (4½ Yelledab).
W. B. Gibb (2¾ Douglas).
H. Karslake (3½ Rover)
E. Pond (3½ Rudge)
B. Marians (2¾ P. and M.)
W. Chater-Lea (8 Chater-Lea and sc.)

Reserves: J. Chater-Lea (8 Chater-Lea and sc.) and W. S. May (5 Portland-Jap.)

Norfolk M.C.C. (Great Yarmouth).

A. Wyatt (3½ Ariel)
F. C. North (3½ Ariel)
S. J. Allen (3½ Triumph).
R. O. Clark (2¾ F.N.)
C. Duberly (3½ Ariel)
H. Collins (8 Bat and sc.)

Reserves: Dr. V. H. Blake (2¾ Anglian) and R. Walker (3¾ Scott and sc.)

Northamptonshire M.C.C.

Rev. B. H. Davies (3½ Rudge)
C. Underwood (3½ Bradbury)
A. E. Catt (3½ Triumph)
W. Lees (3½ Triumph)
A. Webster (2½ Hobart)
Rev. P. W. Bischoff (6 Zenith and s.c.)

Reserves: C. Harris (3½ Triumph) and P. T. Cole (8 Matchless and sc.)

North Middlesex M.C.C.

H. H. Chews (5 Indian)
W. L. J. Rhys (3½ Triumph)
D. Noble (3½ Rover)
A. V. Deacock (4 N.L.G.)
E. C. Jarvis (3½ Triumph)
H. A. Grose (8 Chater Lea and sc.)

Reserves: J. H. Hilyer (3½ Humber) and P. Dangerfield (3½ Zenith and s.c.)

Norwich and District M.C.C.

H. G. Browne (3½ Triumph)
A. B. Everard (3½ Triumph)
C. B. Coleman (3½ Triumph)
F. Brighty (3½ J.A.P.)
H. Chapman (3½ Crown Precision)
A. W. Lincoln (7 Morgan runabout)

Reserves: H. Duge (3½ N.S.C.) and J. Boddy (7 Ba and sc.)

Oxford M.C.C.

H. O. Beard (2½ New Hudson)
A. G. Davis (3½ Triumph)
H. Asker (3½ Triumph)
H. G. Hill (3½ Bradbury)
J. Webb (3½ Triumph)
W. A. Matthews (7 India and sc.)

Reserves: A. D. Arter (3½ James) and R. H. Viggers (2 Enfield).

S.E. London M.C.C.

S. Browne (3½ Bradbury)
G. Brown (3½ Zenith)
H. Paul (3½ Rex)
J. A. Pell (3½ Humber)
N. Daintree (5 Peugeot)
H. J. Hamilton (10-12 Lagonda tricar)

Reserves: E. H. West (3½ Bradbury) and E. S. Vanhous (5 Rex).

North-West London M.C.C.

Sheffield and Hallamshire M.C.C.

T. Durant (3½ J.A.P.)
C. Bellamy (3½ Zenith)
S. Sawer (3½ Premier)
A. T. Smith (3½ Zenith)
J. A. Stacey (3½ Rudge)
J. Haslam (6 Zenith and sc

Reserves: H. Swift (2¾ Douglas) and H. Short (6 Chater Lea and sc.)

Streatham and District M.C.C.

S. T. Tessier (5 Bat)
A. Bright (2½ New Hudson)
H. Johnson (3½ Triumph)
R. G. Mundy (3½ Triumph
W. Oldman (5 Bat and sc.
E. Ware (8 Chater Lea, sc

Reserves: H. Hunter (5 Bat) and J. W. Ayres (4 Osborne

Surrey M.C.C.

J. Kennedy, jun. (3½ Bradbury)
F. A. McNab (3½ Trump-Jap)
A. Ommaney (3½ Rudge)
G. Pine (3½ Triumph)
G. Williams (3½ Arno)
G. Higgs (6 A.C. Sociable)

Reserves: C. J. Perry (3½ Triumph) and A. J. Atkin (6 A.C. Sociable).

Sutton Coldfield A.C.

E. M. Lake (3½ Triumph)
F. P. Mayell (3½ Triumph)
H. E. Dixon (3½ Triumph)
Howard Smith (3½ Triumph
J. Woodhouse (3 Calthorpe
W. Mist (5 Mist and sc.)

Reserves: E. Newman (3½ Ivy-Precision) and W. H Eggington (3½ Zenith).

Walthamstow Motor Club.

A. Peppercorn (3½ Bradbury)
H. T. Browett (8 Minerva)
F. W. Applebee (3½ N.S.U.)
J. H. Kerr (3½ Zenith)
F. A. Applebee (3½ Scott)
G. West (5-6 A.C. Sociable

Reserve: J. W. Percival (6 Fafnir Royal tricar).

NEXT WEEK!

"The Motor Cycle" T.T. and Summer Number.

SPECIAL ARTICLES AND ILLUSTRATIONS

ENLARGED ISSUE.

ON SALE EVERYWHERE, THURSDAY, JUNE 29th, 1911.

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Insurance.

[5681.]—Unfortunately I recently met with an accident to my motor cycle, which is insured with the A.A. and M.U., and I wish to thank them for the very prompt and most satisfactory way in which they settled my claim.

FRANCIS B. DUMBELL.

Beware Wax Vestas.

[5682.]—The following account of a rather peculiar incident may interest your readers. I was using a moter bicycle with sidecar attached, in which was carried a suit case containing clothes and a box of wax vestas. Happening to glance down at the sidecar when going along, I was amazed to see flames issuing from the body. Pulling up, I was just in time to stop all the body (a torpedo one) from being burnt up. As it was, the suit case and clothes were ruined, also half the body and an overall jacket used for beating out the fire.

Was it spontaneous combustion (being a very hot day), or was it friction of the vestas rubbing together? Anyhow, beware wax vestas.

R. G. NYE.

Of Interest to Humber Users.

[5683.]—I have a Humber two-speed of this year. One or other of the two levers which compress the high-speed band kept breaking away from the centre pulley.

Neither an expert firm nor myself discovered the cause till it had happened three times. The trouble was due to a bent stand. A part of it projected and caught the tips of the bolts on which the levers revolve whenever I started the engine on the stand causing the bolts eventually to break through the metal centre.

I thought the matter might interest some of your readers, as I have since my trouble discovered a similar case, due, though the rider was in blissful ignorance, to the same cause. I should like to pay a small tribute to the Humber people, who three times sent me a new centre pulley without charge. Though as an old motorist I do not blame myself in the matter, I appreciate their generosity.

W. H. S. OULTON.

The Vicious Dog.

[5684.]—I suggest that some concerted action be taken by the general body of cyclists and any others who like to join in to obtain some moderate and reasonable legislation by which owners of dogs would be compelled to keep them under proper restraint when on the highway. I believe thousands of cyclists would pay a small subscription to a league for getting the matter before Parliament.

G. P.

[5685.]—May one who has ridden for five years in the East, where almost all the myriads of "pie" dogs think it their duty to rush at motor cycles, offer your correspondent the result of his experience as to the best means to defend himself against the trouble.

I find that a long thin rattan cane with a lumpy heavy head is the best weapon of offence and defence. The sight of it is usually enough to keep the dogs away, but if they come too near one can hit them with the heavy end and give them cause to remember that motor cycles are not made for their particular benefit. An extra long cane should be chosen, as thin in the stem as possible, and with as heavy a head as possible. I fancy bundles of them could be found near the docks. They can be bought at stick shops, but these are shortened and polished.

These canes are not at all in the way when riding, as the head sits quite comfortably in the arm-pit, and the weight of the arm keeps it there, and if the stem is put over the handle-bar both hands are left quite free for the manipulation of the machine. It is also a useful weapon against charging cattle.

LA 2825.

[Many Continental riders carry a riding whip in clips on the handle-bar, and the Continental Tyre Co. and the Hanover Rubber Co. sell a rubber "sjambok" specially made for the purpose.—ED.]

Preserving Plated Parts from Rust.

[5686.] Your correspondent, "SA 644," will have no difficulty in making a celluloid varnish if he thoroughly cleans both sides of the films and then dissolves them in acetone.

ANOTHER CHEMIST.

[5687.]—In conjunction with letter No. 5652 of June 8th, I should like to point out that celluloid varnish may be very easily prepared from old photograph films or picture films. First wash in warm water to remove the prepared surface until film is quite clean and transparent, then scrape into fine flakes or cut up exceedingly small, place in a test tube, and cover with amyl acetate (obtained for a few pence), and allow to stand (solution can be accelerated by standing in hot water); density should be about that of glycerine. The plated parts of machine should be thoroughly clean and free from grease and moisture, when the above preparation can be painted on with a small brush. Acetone is also a solvent.

I have tried the above on my machine with very gratifying results, and have also used it as a skin paint to cover finger cuts.

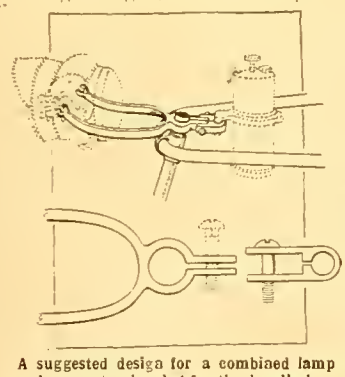
C. R. HARLEY.

Combined Handle-bar and Lamp Bracket.

[5688.]—I enclose a sketch of a combined handle-bar and lamp and generator bracket which has been protected.

The stem tube of the handle-bar is carried up through the lug, and projects above a sufficient height to form a bracket for lamp and generator.

This design provides a bracket of great strength, rigidity, and lightweight, and is exactly what is wanted for the forked bracket now in general use for carrying lamp and generator in combination. It also simplifies the clamping arrangements of forked brackets, as is shown in the accompanying sketch of one designed for the new handle-bar, in which one bolt and nut only are necessary to secure both lamp and generator. Fewer parts are required, and attachment and detachment are simple in comparison with the present system of fixing the split clamp on the stem below the handle-bar.



A suggested design for a combined lamp and generator bracket for the handle-bar.

Another and not the least important feature of this bracket is the low cost of manufacture, which amounts, practically, to the price of tube required.

Lamp brackets as now generally fitted to motor cycles are useless for an up-to-date lamp, and are usually dispensed with, if possible.

JOHN MILNE.

Garage Experiences.

[5689.]—I sympathise with your correspondent "R 910." I have been the victim of a worse overcharge.

A week ago, after being caught in a heavy storm, I left my "Moto Velo" at the shop of a repairer, asking him to wipe it down to prevent rust.

The next morning I called for the machine. It had not been thoroughly cleared. It had only been wiped down hastily and superficially. Parts of it were red with rust, and others muddy and oily. I could have cleaned it as well in twenty minutes.

The repairer charged 2s. 6d. and, when I refused to pay, threw my machine roughly in his shop again, and would not let me have it.

I went out and consulted a policeman, who hesitated and finally said that he couldn't get my machine for me, and that, as I had made no previous agreement as to the charge, the repairer could charge what he liked, and could keep my machine until the 2s. 6d. had been paid.

Finally I had to pay, as one can't be deprived of one's machine indefinitely, and go to the law courts for the sake of 2s. 6d. A.A.

[The repairer has a lien on the machine until the amount claimed is paid, but if name and address and a reasonable sum are tendered the machine cannot be withheld, and damages can be claimed for its detention. If the owner was afterwards sued he would have to prove that the amount tendered was a reasonable sum.—ED.]

Is the Spider Quad Coming to Stay?

[5690.]—Though admiring Dr. Patterson's whole-hearted championship of the motor bicycle, and especially the Douglas, I cannot quite agree with him on all points. He begins by allowing a little lukewarm praise to flow gently around the "Spider" quad, but at the end of his letter he covers it in invective, heaps abuse upon it, and metaphorically scraps the entire insect.

At first we find that it may have a future, that it must be light, and air-cooled, and that the driver can keep warm and clean in it; but reading on we are told not to be "fobbed off" with a "nondescript vehicle" which is full of "vice." In fact, nothing is bad enough for it.

Now I think the writer, if he takes himself to task severely enough, will admit that there have been occasions when a nice little four-wheeler with room for a passenger or some luggage would have been acceptable. I have myself owned a Douglas, and during the nine months I had it I never knew what a breakdown was, but at the same time I cannot admit that it, or any other machine I have had, entirely filled the bill for a professional man.

However many cars I might own I should hope never to be without a motor bicycle, and my ideal for a man with a shortish purse would be a medium-powered motor bicycle, and one of the much maligned new quads of about 8 h.p. I firmly believe that if the price could be got down to £80, and the ideas of the various firms could be more or less crystallised and put before the eyes of the public in frequent tests and trials, these little vehicles would have a great future before them, far greater than the tricar had, or ever will have. But what we small buyers want is half a dozen more firms like the Humber and Chater Lea people to evolve an air-cooled quad, and then to test it as well and thoroughly as motor cycle makers test their new ideas before marketing them, and then to put them before us in all their glory at Olympia. With regard to the machines themselves, I think the less spiderish they look the more people will like them—they should be faked to look as much like a little car as possible. Then the seats should be long and have plenty of back rest. In conclusion, I differ entirely from Dr. Patterson on the pedal question for bicycles. I would never have a machine under 5 h.p. without pedals.

H. S. GASKELL, M.B.Ch.B.

[5691.]—In reading that interesting letter [No. 5663] *re* the Spider quad, I have come to the conclusion that Dr. Patterson has overlooked one overwhelming advantage possessed by the Spider quad when used for professional or business purposes that is not possessed by any motor cycle now on the road. I refer to the ability to appear before one's clients in correct attire.

Of course, Dr. Patterson having, as I assume he has, a large and scattered country practice, a two-speeded lightweight machine no doubt is entirely satisfactory, because his visits will be of a more or less informal character, and not of the "silk-hatted" variety.

I do not mean that it is impossible to keep clean on a single track machine. It is, but the clothing one has to adopt to ensure this quite precludes a call on a client in such attire. At the best of times one cannot wait on a firm in a cap and mud-bespattered overalls, neither can one go through a "quick change" act outside every customer's premises. The only way in which a motor cycle can be used for business travels is when visiting big towns, where it is possible to drive straight to a garage, store the machine, discard one's overalls, and, after donning a "bowler," the desired visits can be made in proper manner, and even this method is not ideal, as I know from experience.

But when small towns are to be visited, and perhaps only two or three calls made, such procedure is not possible.

It is here where the Spider quad scores by enabling a visit to be made just as one steps out of the machine, and it is an easy matter to have under the seat a cap, goggles, and a pair of gauntlet gloves for driving between towns. In addition, anyone knowing the road conditions round and about the manufacturing towns of Lancashire, with their countless miles of tramlines and greasy setts, would never wish to ride a single track machine day in day out in these districts, not to speak of the comfort and sample-carrying qualities offered by the quad.

In conclusion, may I say that I most emphatically disagree with Dr. Patterson's opinion that light weight and low power spell reliability.

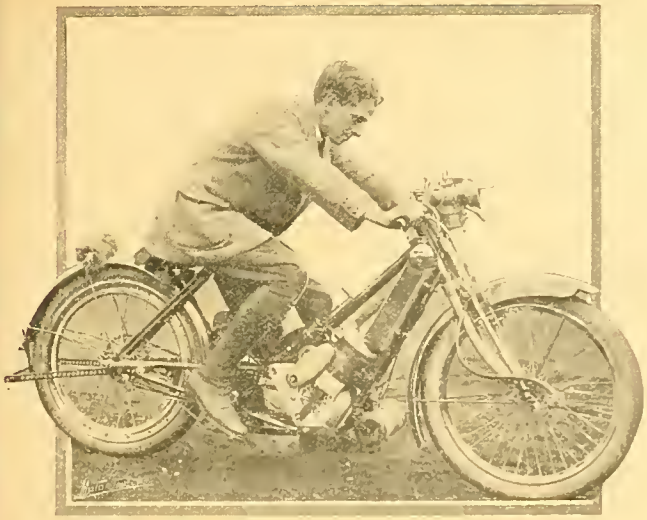
Far better have a machine with an engine well up to its work and with substantial parts that will stand plenty of knocks and hard wear, but "multi-speeded" by all means.

CECIL KIMBER.

American Records. A Scottish Rider bears Testimony to their Authenticity.

[5692.]—Allow me a little space in your valuable paper regarding English and American motor cycle racing. I was one of the most successful riders in competition in Scotland

Mrs. Stacey, on her 3½ h.p. Rudge and sidecar, who has been presented with a gold medal by the Sheffield and Hallamshire M.C.C. for being the only lady to drive successfully to Bridlington and back in the club reliability competition.



Frank Philipp and his new T.T. two-stroke Scott

during 1909 and 1910. I had a desire to go to the United States, and at the same time had no intention of following the racing game. However, I landed in New York about the middle of April, and having my 7 h.p. Rex, with which I won several scratch hill-climbs in Scotland last season, I got to know about a race meeting to be held on May 30th, at Springfield, the home of the Great Indian, and entered the lists. Having found my belt no good, I fitted a chain, which was a great success, and got as good as one mile in 49s., and could average mile after mile in 50s. But, to my surprise, I learned something when the famous Nos. 21 and 23 Indians turned out, and reeled off mile after mile in 45s., and in fact when their riders, letting them out with the last grip, did 43½s. and 44s., which I think is a great speed on a three laps to the mile track.

Now, once and for all, believe me, the American records are correct, and one thing I would like to see is a few of our riders visit the States on a racing tour, and they will find out what Americans can do on board or dirt tracks to their surprise, I am sure, and no doubt they would hold their own along with the majority of the Americans.

I myself have ordered an 8 h.p. J.A.P., which I am sure will hold its own, built into a set of Chater-Lea fittings, suitable for board track racing. There is plenty of racing all over the country, and they are all sportsmen here, not afraid to meet each other in a race, as I have noticed occasionally at home. When a good man turns out here, the novice turns out against him to try and beat him. Every motor cyclist here has the speed craze, which will last for many a year to come, and any motor cyclist or firm that wishes to know anything regarding weight, gear ratio, and type of machine that is used, I will only be too glad to give all information I can.

JAS. BAXTER.
(Late of Edinburgh).
Springfield, Mass.

Change-speed Gears and Sidecars.

[5693.]—In reply to letter 5676 last week, I think if he will try once more and get a 5 h.p. Rex de Luxe with the makers' two-speed gear, he will have no more trouble. My machine is a 1908 5 h.p. Rex. I am using it constantly over the hilly counties of Devon, Cornwall, and Somerset, which include Dartmoor hills, and they are up to the average roughness. The two-speed gear has never failed me but once, and then I broke a cog owing to my own foolishness in fouling the two levers at once. On dismantling I found the gears otherwise in excellent condition. This was a month ago, after three years' wear. During the time I have done two trips of 600 miles across England. I agree with 5676 that tyres are somewhat expensive.

H. W. SOLLEY.

[5694.] — Replying to No. 5676, regarding speed gears and sidecars, I think he is a little unfair on those firms who do make a really good machine with gears that will stand anything. I have a No. 7 7-9 h.p. Chater-Lea and rigid sidecar, with handle starting, two-speed gear and clutch lined with Ferodo. Their gear box is, I think, too well-known to need description; suffice to say that there is no hill in the world which this machine will not climb, that is, if it will hold the surface. I have climbed 1 in 3½ with passenger and self weighing 23 stones, and 1 in 5 with two passengers, total weight 31 stones. I do about 400 miles per week, over all kinds of roads; can start on any hill even on 1 in 3½ portion with passenger in car. My frame has certainly not broken yet, and I do not think anyone who knows this district (the Peak of Derbyshire) will say the roads are the best, or that we are free from hills.

The only part I can agree with him is his reference to tyres. I have yet to find the maker who can supply me with a tyre, rubber, which I can expect to ride for 2,000 miles on the driving wheel. I find that I am ready with my tyres for retreading before I have done 600 miles.

I have no interest in any firm, but after fourteen years of motoring, and this is my eighteenth machine, I must admit I never rode one which gave me greater pleasure, and I have ridden all horse-powers from one-third to twelve, so think I may be allowed to judge a little.

J. W. BROWN.

Hill-climbing.

[5695.]—It may be of interest to your readers to know that while touring in North Devon at Whitsuntide on a 1911 two-speed pedal Douglas I succeeded in climbing both Porlock and Lynmouth-Lynton hills at the first attempt without a dismount. I used the pedals on both climbs, Porlock requiring hard pedalling, but Lynton I got up comparatively easily. My machine was in full touring trim, with a parcel on the back, both tanks full, and complete tools and spares outfit.

Adding the usual disclaimer,

L. W. SPENCER.

Practising on the T.T. course was commenced on Thursday last. The scene above is near Glen Helen.

M.C.C. TEAM TRIAL FOR

"THE MOTOR CYCLE" CHALLENGE CUP

THE eighth annual inter-club team contest for *The Motor Cycle* fifty-guinea challenge cup was even more successful than its predecessors, the twenty-one clubs entering creating a new record. Last year, it may be remembered, eighteen teams of six riders took part. The conditions were revised for Saturday's event, for although reliability was the outstanding feature of the contest, regular running without the aid of watches, speedometers, or mileage recorders decided the winning team.

Previous winners of the club championship—for such it is generally regarded—are given hereunder:

1904.—Coventry M.C.C.
1905.—M.C.C. walked over.
1906.—M.C.C.
1907.—Coventry M.C.
1908.—Coventry M.C. won old trophy outright.
1909.—M.C.C.
1910.—Coventry and Warwickshire M.C.

A new course was necessary in view of the fact that the conditions were altered, and it was a well-kept secret up to the start. Competitors were asked to assemble at the M.C.C. headquarters, the Crown Hotel, Bicester, Oxon, at 12.30 p.m. last Saturday, where numbered cards were dealt out to the participants. A move was then made to the Middleton Cross Roads, a mile outside the town, and the long line of competitors extended for a considerable distance, and formed an impressive sight. The list of competing teams will be found on page 620. Mr. F. T. Bidlake held the watch, and Messrs. R. H. Head and J. Van Hooydonk having marshalled the competitors, prompt at 1 p.m. R. W. Duke (No. 1, Birmingham) led off the ball. He was followed at half-minute intervals by P. F. Davis (No. 1, Bristol) and G. Smith (No. 1, Coventry), and so on to the end of the list, when the No. 2 men were despatched.

A Slightly Longer Course.

The course was as follows: Middleton, past Lord Jersey's seat, Hopcrofts Holt, Deddington, sharp right in village to Aynho, Cronghton, Barleymow, past Tusmore Park (the Earl of Effingham's estate), on to the Banbury-Bicester road, when a sudden turn to the right was taken, avoiding the town and bringing the competitors to the starting point. The contest created a great deal of interest along the route, and was closely followed throughout. The course was by no means severe, and measured 26½ miles. Some competitors guessed twenty miles, others thirty, proving how easy it is to be misled without any guide whatever. There were no church clocks this time! The M.C.C. officials had been too careful for that. The roads were very loose and lumpy in places, especially off the main roads, and many were the puncturing implements dropped from farmers' waggons strewn here and there. As an exhibition of reliable running the result was not striking, only three complete teams surviving the course. The clubs to share that honour were the Derby and District M.C.C., the North-west London M.C.C., and the South-east London M.C.C. One club—the Surrey M.C.C.—scratched, leaving twenty clubs in the competition, and of the 120 riders engaged there were seventy-six actual non-stop runs recorded, representing 63%.

Competitors Early in Trouble.

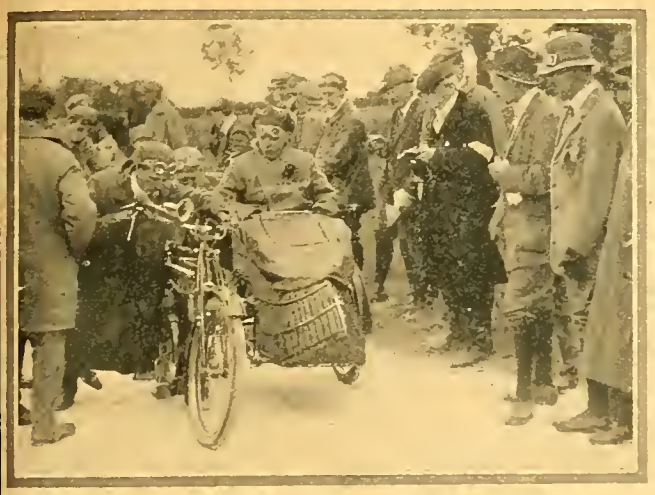
Reverting to the start, the weeding-out process commenced early. It was noticeable that practically all had adopted an old Coventry club rule—new tyres to start with—but despite this precaution not a lap had been completed before failures were ascribed to the puncture fiend. Others accidentally rode off the course, although it had been efficiently marked with arrows immediately prior to the start. It is said that some mischievous country boys thought the arrows were done with and altered their position. Besides the three teams already mentioned, the following clubs had complete teams in the running at the completion of the first circuit: Bristol, Coventry, Leicester, Manchester, Yarmouth, Northants, Streatham, and Walthamstow. Baddeley (M.C.C.) was early in trouble, as also F. Mussell (Herts County A.C.)

It is a rule of this competition that at least one machine be a passenger-carrying motor cycle. The Norwich M.C.C., having no sidecar, relied upon A. W. Lincoln to carry a passenger on his Morgan runabout. The passenger was seated over the rear mudguard, high up above the driver's head, reminding one of a look-out man on board ship. Mascots were plentiful. The Yarmouth men, those old supporters whom we were glad to see once again, carried bloaters, the Norwich riders canaries—not to mention the musical exhaust whistles—and quite a number carried tiny Union Jacks on the handle-bars.

A Succession of Tyre Troubles.

There was no cessation to tyre troubles throughout the competition. We passed Howard Smith (Sutton Coldfield) tyre repairing, and the holders of the trophy, the Coventry and Warwickshire M.C.—whose team this year was mainly composed of amateurs—suffered a reverse at the sixtieth

Scene outside the Crown Hotel, Bicester, at midday on Saturday last.



F. T. Bidlake starting W. Houghton (single-geared Bradbury and sidecar) of the Manchester team.

mile, E. A. Isherwood puncturing, whilst at the seventy-sixth mile Geoffrey Smith also picked up a nail, but completed the third circuit on the rim. G. West (Walthamstow) experienced hard luck, for he came to a standstill with his A.C., but could find nothing wrong, and the engine at once responded to a turn of the starting handle. At the eighty-sixth mile, C. E. Kettle (Manchester) ran out of petrol, which fate befell several others. A few miles further on C. T. Lloyd (Coventry) broke an inlet valve, and J. H. Kerr (Walthamstow) punctured the front tyre but he pluckily continued on the rim, swerving all over the road. But he was shedding bits off his Zenith towards the end, for his silencer struck the ground and disappeared, the brackets were trailing along, and the lamp was shaken off by the vibration. However, he achieved his ambition and finished without a stop. The Sheffield, Norwich, and Essex clubs performed very poorly, for only one representative of each of these clubs gained the maximum marks.

Excitement ran high towards the conclusion, for the previous winners and holders (the M.C.C. and Coventry) were known to be out of the running, and for the first time since the original contest of 1904 an outside club was to carry off the coveted trophy. Cheer after cheer was raised as each little group of club members recognised their last man in the distance, and ultimately it was found that the three clubs already enumerated had covered the course without an involuntary stop. An examination of the timekeepers' notes revealed the fact that the Derby and District Motor Cycle Club members had deviated the least from the schedule speed of 20 m.p.h., and they were therefore declared winners of *The Motor Cycle* Cup. The team was as follows:

DERBY AND DISTRICT M.C.C.

	Error in time. m. s.
E. G. Boissier (H. and M.-Jap)	6 55
A. Ainsworth (3½ Rudge)	4 49
J. W. Cox (3½ P. and M.)	19 26
E. Vernon Clarke (3½ Bradbury)	12 41
Edgar Russell (3½ Bradbury)	10 22
A. B. Bennett (5 Rex and sc.). F. Sharpe passenger	12 19
Total errors	66 32

Second—Silver Medal Winners.

NORTH-WEST LONDON MOTOR CYCLE CLUB.

	Error in time. m. s.
G. Rowden (3½ Triumph)	10 10

C. Bailey (Leicester) and D. Noble (North Middlesex) passing the timekeeper at the Middleton cross roads.

H. L. Printz (5 Bat-Jap)	6 15
Hal Hill (5 Bat-Jap)	*42 58
W. H. Berlindina (Indian)	2 45
J. Steinberg (Scott)	5 55
O. Hill (8 Bat and sc.)	11 9
Total errors	79 8

*Early.

The N.W. Londoners were unfortunate. Their team included the most regular and the most erratic riders, though in fairness to Hal Hill it should be mentioned that he was pressed into the team at the last moment, and his difficulty was to keep his 5 h.p. T.T. Bat-Jap down to the required pace. W. H. Berlindina's performance was a really wonderful one.

Third—Silver Medal Winners.

SOUTH-EAST LONDON M.C.C.

	Error in time. m. s.
S. Browne (3½ Bradbury)	8 57
G. Browne (3½ Zenith)	11 13
H. Paul (5 J.A.P.)	10 36
J. A. Pell (3½ Humber)	20 29
V. Daintree (5 Peugeot)	11 20
H. J. Hamilton (10-12 Lagonda tricar)	21 14
Total errors	83 49

S. Wright (Humber), of the Coventry and Warwickshire M.C. team, which usually successful club was a long way down the list this year owing to punctures.

M.C.C. Team Trial for "The Motor Cycle" Cup.—

The following are riders who made non-stop runs:

BIRMINGHAM M.C.C.

R. W. Duke (3½ Zenith-Gradua)
A. M. Lomax (3½ B.S.A.)
K. Holden (3½ B.S.A.)
S. A. Rowlandson (3½ Rudge)
Dr. Pawcett (8 Chater-Lea-Jap and sc.)

BRISTOL B. AND M.C.

P. F. Davis (3½ Rudge)
Eli Clarke (2¾ Douglas)
F. C. Wasley (2¾ Douglas)
E. Kickham (2¾ Douglas)
F. Bevan (5 Rex)

COVENTRY AND WARWICKSHIRE M.C.

A. Elson (3½ Triumph)
S. Wright (3½ Humber)
Bert Yates (3½ Humber)

ESSEX M.C.

B. A. Hill (3½ Rudge)

HERTS COUNTY A.C.

C. C. Cooke (3½ Triumph)
E. A. Colliver (3½ Zenith)
C. Down (2½ Royal Enfield)
F. A. Hardy (5 V.S.)

LEICESTER AND DISTRICT M.C.C.

A. L. Barker (3½ Clyde)
F. C. Poecher (3½ Triumph)
C. Bailey (3½ Rudge)

MANCHESTER M.C.

Harry Reed (3½ Dot)
T. Nedham (3½ Clyde)
J. Findley (8 Bat and sc.)

MOTOR CYCLING CLUB.

W. B. Gibb (2¾ Douglas)
H. Karslake (3½ Rover)
W. Pratt (P. and M.)
B. Marians (2¾ P. and M.)
J. Chater Lea (8 Chater Lea and sc.)

NORFOLK M.C.C.

A. Wyatt (3½ Ariel)
S. G. Allen (3½ Triumph)
R. O. Clark (3½ L.M.C.)
C. Duberley (3½ Ariel)

NORTHAMPTONSHIRE M.C.C.

C. Harris (3½ Triumph)
W. Barratt (3½ Zenith)
D. Barratt (3½ Triumph)
W. H. Lees (3½ Triumph)
C. H. Jolly (3½ Triumph)

NORTH MIDDLESEX M.C.C.

H. A. Cheers (5 Indian)
J. A. Hilyer (3½ Humber)
D. Noble (3½ Rover)
E. C. Jarvis (3½ Triumph)
H. A. Grose (8 Chater-Lea and sc.)

NORWICH AND DISTRICT M.C.C.

A. W. Lincoln (7 Morgan Runabout)

OXFORD M.C.C.

H. O. Beard (2½ N. Hudson)
R. H. Viggers (2¾ Enfield)
G. F. Cooper (3½ Triumph)
H. G. Hill (3½ Bradbury)
W. A. Matthews (7 Indian and sc.)

SHEFFIELD AND HALLAMSHIRE M.C.C.

S. Sawer (3½ Premier)

STREATHAM AND DISTRICT M.C.C.

S. T. Tessier (5 Bat)
H. Johnson (3½ Triumph)
R. G. Mundy (3½ Triumph)
E. Ware (8 Chater Lea & sc.)

SUTTON COLDFIELD AUTOMOBILE CLUB.

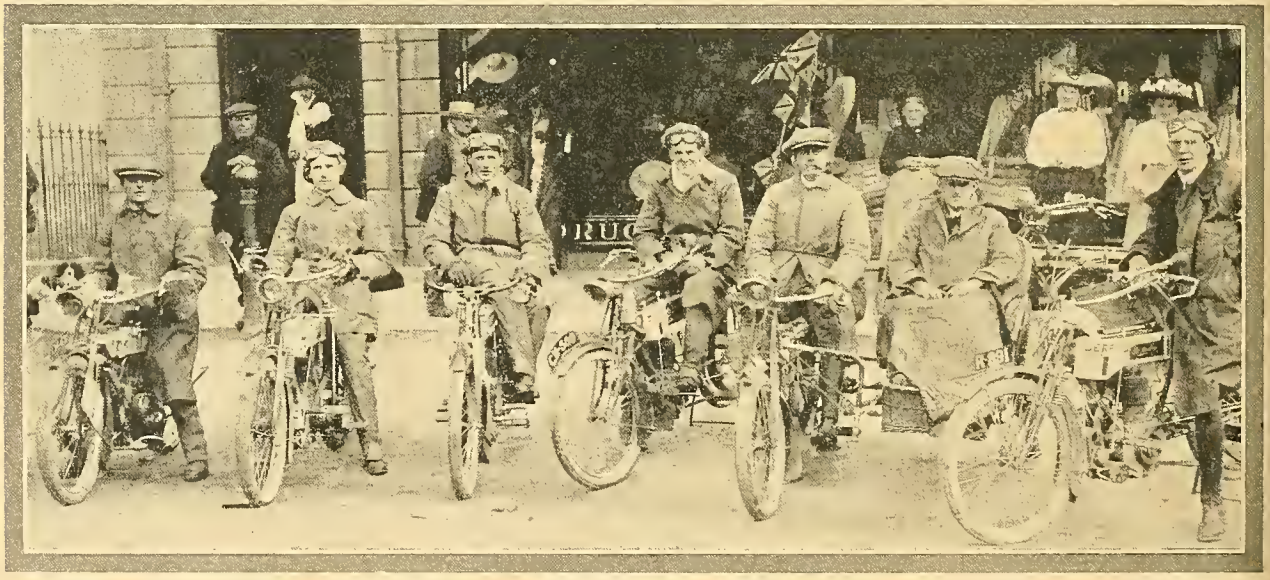
F. P. Mayell (3½ Triumph)
H. E. Dixon (3½ James)
W. Mist (5 Mist and sc.)
J. Woodhouse (3½ Mead-Precision)

WALTHAMSTOW M.C.

A. Peppercorn (3½ Bradbury)
H. T. Browett (8 Minerva)
F. W. Applebee (3½ N.S.U.)
J. H. Kerr (3½ Zenith)
F. A. Applebee (3½ Scott)

The judges were Messrs. J. W. G. Brooker (A.C.U.), Rev. B. H. Davies (for the donors), and Dr. J. C. O'Rafferty (M.C.C.); chief marshal, Mr. F. J. Jenkins, besides a number of stewards and clerks of the course. Mr. J. Van Hooydonk is to be congratulated on the excellent entry, achieved by no small amount of work.

WINNERS OF "THE MOTOR CYCLE" CUP—THE DERBY AND DISTRICT M.C.C.



J. W. Cox (P. and M.) | E. Russell (Bradbury.) | A. Ainsworth (3½ h.p. Rudge.) | E. G. Boissier (3½ h.p. J.A.P.) | A. B. Bennett (5 h.p. Rex and sidecar.) | Vernon Clarke (3½ h.p. Bradbury).

SIX DAYS' RIDE ON A LIGHTWEIGHT.

H. V. Swift, a member of the Sheffield and Hallamshire M.C.C., started on Wednesday last week to establish a six days' record on a 2¾ h.p. Douglas, riding 350 miles a day. He left Sheffield at 3 a.m., checked by the *Sheffield Daily Telegraph, en route* for Holyhead, and returned the same day—347 miles. The following daily rides ended each night in Sheffield. Thursday, London—356 miles; Friday, Newcastle-on-Tyne—333 miles; Saturday, Yarmouth— —— miles; Sunday, London—356 miles; Monday, Bridlington and back twice. At the time of writing he was about fifteen miles to the good with one day's ride to complete. The machine is a 1910 model fitted with Rich tyres and detachable tubes. He is being checked by members of his club, who receive information showing the time he passed through the various towns, with checkers' signatures and addresses. The little Douglas he is riding had given unqualified satisfaction. No trouble at all had been experienced up to the end of last week.

THE NEW SIX DAYS' RECORD.

Our announcement of W. J. Clarke's six days' ride last week caused a considerable amount of surprise, as A. E. Catt's figures were considered to be well nigh invincible. Clarke, it will be remembered, rode a 3½ h.p. Rex with Hutchinson tyres, his route being between Doncaster and Mablethorpe. A correspondent tells us that his machine was not sealed and that he rode without a silencer.

Clarke has sent us a full detailed list of his times at various stopping places and the names of the checkers, and although we have no space to spare to publish it, it may be examined at our offices. The start was at 12.15 a.m. on Tuesday last week, a distance of 492 miles being covered by 10.5 p.m. Wednesday's total was 450 miles, between 3.55 a.m. and 11.45 p.m. On Thursday 429 miles were covered between 3.55 a.m. and half an hour after midnight. A start was made on Friday morning at 8 and by 12.30 a.m. 450 miles was added, Saturday another 450 miles between 3.45 a.m. and 8.45 p.m., and the last day 429 miles between 8 a.m. and 11.55 p.m., a grand total of 2,700 miles in the six days. June 6th to 11th.

THIRD SHORT HANDICAP AT BROOKLANDS.

ONE of the most brilliant meetings ever witnessed on the famous track was held on Saturday last. Shortly after 2 p.m. there entered several hundred of His Majesty's Indian guests, representing nearly every dependency of the Indian peninsula. The chief notabilities were Lord Mayo, the Sultans of Perak and Kedah, and the Maharajah of Tikari. These gentlemen lent a touch of colour to the throng, and a picturesqueness which the sombre English crowd would not otherwise have possessed. Despite all these attractions, there was but one motor cycle race.

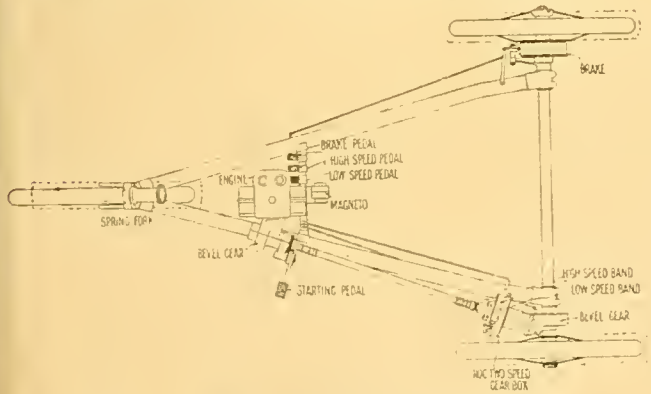
The motor cycle race was the fourth event on the programme, and was down as the Third Short Motor Cycle Race (a handicap). The entrant of the winner to receive 8 sovs. or a cup at option, the entrant of the second 4 sovs. or cup at option, and the entrant of the third 2 sovs. or cup at option. Distance, about 5¾ miles. The machines were started at the fork, passed the fork once, and then entered the straight. The order at the end of the first lap was Shanks, Baker-White, Captain Harkness, McNab, Harrison Watson, Haswell, Surridge, Johnson, Forgan-Potts, Schmidt, Luce, Godfrey, and Ainslie. Result:

Rider and machine.	Bore and stroke.	c.c.	H'cap.
1. F. A. McNab (1-cyl. Trump-Jap)	90 ×77.5	492	1 12
2. A. Baker-White (1 Trump-Jap)	85.5×85	488	1 26
3. V. J. Surridge (1 Rudge) ...	85 ×88	499	0 50
4. O. C. Godfrey (2 Indian) ...	82.5×93	994	scr.
5. P. Schmidt (2 N.S.U.)	75 ×90	796	0 40
6. J. Harrison Watson (1 Rudge)	85 ×88	499	1 16
7. J. R. Haswell (1 Triumph) ...	85 ×88	499	1 16
8. J. Forgan-Potts (2 Indian) ...	70 ×83	639	1 2
9. W. Johnson (1 Buchet)	76 ×73	331	1 34
10. Captain P. Y. Harkness (1 Triumph)	85 ×88	499	1 32
11. M. L. Ainslie (1 Zenith) ...	85.5×85	488	1 16
12. A. J. Luce (2 Bat)	85 ×65	740	0 54

There was a strong wind blowing, which rendered the bulky McNab's task of winning all the more difficult. He won by three lengths, and covered the course at a speed of 58¾ m.p.h. Godfrey came down the straight at a splendid pace, probably over 80 m.p.h.

A TRIAL OF THE ROC TRICYCLE.

WE had an opportunity a few days ago of a trial spin on the Roc tricycle which has undergone several important improvements since it was exhibited at Olympia. The idea of the firm of A. W. Wall, Ltd., whose works are at Tyseley, near Birmingham, is to market a light tricycle chassis constructed to carry one passenger in front and a box for goods behind. The same chassis also lends itself to a light side entrance body for one, but at any rate for the present there is no intention of marketing the machine as a sociable, although the one we drove had a two-seated test body. We purposely refrain from publishing a photograph of the complete vehicle, because it was not at the time of our visit absolutely what the finished article will be. However, we give a line plan

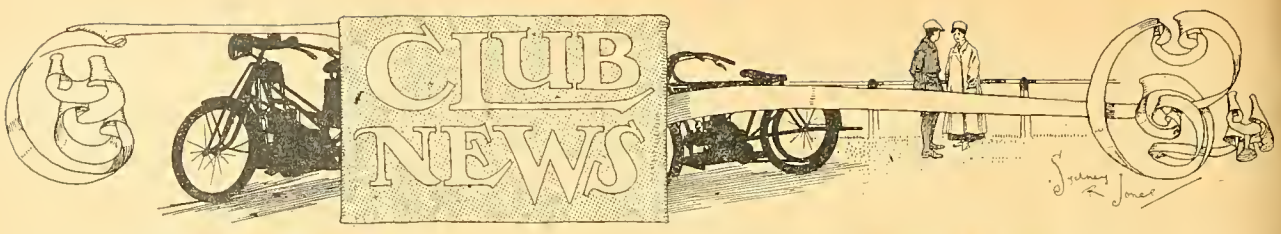


Plan view of the Roc tricycle chassis showing arrangement of propeller shaft, etc.

view to enable the description to be fully understood. The general design of the chassis remains as before, *i.e.*, it has a single steering front wheel and two rear wheels connected by a channel steel frame and strengthened girder spring front fork, one rear wheel only is driven by a propeller-shaft on the left side, but the other wheel is, however, connected to the axle by means of a friction clutch which allows the wheel to be driven when the vehicle is moving in a straight line, but when rounding corners the clutch slips and allows one wheel to overrun the other. The 90 × 95 mm. single-cylinder air-cooled engine is centrally placed with its axle across the frame, a bevel gear being fitted at both ends of the universally-jointed propeller-shaft, the gear reduction to back axle of 5½ to 1 being by two steps. The usual Roc two-speed gear is on the propeller-shaft and revolves with it close to the rear axle. The engine being central and the gear drive at one end of the back axle, the propeller-shaft is inclined at an angle of about 35°. This arrangement enables easy access to shaft and gear, and leaves the centre free for operating pedals and body, the last-named being lower than would otherwise be possible.

With regard to the running, we found the Roc tricycle quite a good hill-climber, as it took all hills on the main Birmingham-Coventry road at a fast speed on top gear with a combined weight of 25 stones. We only used the low speed for starting. Sitting in a chair body and steering by a tiller with spade handle connected directly to the front fork stem is strange after the usual motor cycle handle-bar, but steering is not at all difficult, and the narrow space in which the machine can be turned is surprising. The comfort of the passenger is provided for by springing the body on C springs. The frame, wheels, engine, gear, etc., represent unsprung weight, Mr. Wall's opinion being that if this type of vehicle is to have a future it must be cheapened where possible, and springing the whole entails too much complication and expense: also it is unnecessary if the body be sprung and the speed limited.

Altogether we were favourably impressed with our trial run, and wish the firm every success in their new venture. Mr. Owen, one of Mr. Wall's partners, is convinced that there is a big market for a runabout on these lines, and, judging by the number of similar front steering tricycles one sees in the streets of German cities, we are inclined to agree with him.



Putney and District M.C.C.

A members' reliability trial to Salisbury and back will be held on July 2nd, the winner to receive a pair of Kempshall tyres kindly presented by the Kempshall Tyre Co.

Walthamstow M.C.

A penalty run was held recently. Non-stop runs were made by A. Baker-White (3½ h.p. Trump-Jap), C. E. Gammon (3½ h.p. Triumph), L. Kennard (3½ h.p. Zenith-Gradua), and G. Pine (3½ h.p. T.T. Triumph).

Edinburgh and District M.C., Ltd.

The Amulree open hill-climb fixed for 17th June has been postponed to August or September on account of the scarcity of entries due to the close proximity of the T.T. and other races. Due notice will be given when the new date is fixed.

Herts County A.C. (Motor Cycle Section).

The club has decided to enter a team of three amateur riders to represent the club in the forthcoming six days' trial. The following are the three nominated: E. A. Colliver, C. C. Cooke, and Victor Wilberforce.

Woolwich, Plumstead, and District M.C.

The Collier-Kempshall reliability trial to Hythe and back recently held was won by A. Gallway on 5 h.p. M.O.B.M. W. Williams (3½ h.p. Rex) being second, and J. Tassell (6 h.p. Matchless) third. The President's cup will be competed for over the same course on July 9th, and entries close on July 7th.

Essex M.C.

For the 200 miles non-stop trial on Saturday next, in addition to those already advertised, special prizes are being given for the best performances by private owners in the single and passenger classes, also silver medals will be presented to the best team performance from any club entering six or more competitors.

The Motor Cycling Club.

Admission tickets 1s. each for the Motor Cycling Club's annual race meeting and gymkhana at Brooklands on July 8th may be obtained from F. J. Jenkins, 35, Loveday Road, Ealing. The programme includes the Oxford and Cambridge inter-'Varsity race, an attack on the world's record for motor bicycles by Jake de Rosier, and flying by the Brooklands airmen, in addition to five motor cycle and three car races.

Ilkley and District M.C.C.

The reliability trial for the President's trophy was held on the 11th inst. to Newark and back. There were ten entries. The result was as follows:

1st, Chas. Thackray (3½ h.p. Contrast-Jap), 2 marks start. Total error, $\frac{1}{4} = +1\frac{3}{4}$. President's trophy and gold medal.

2nd, J. Norman Longfield (T.T. Triumph), scratch. Total error, 0 = 0. Silver medal.

3rd, A. Claughton (T.T. Triumph), 1 mark start. Total error, $1\frac{3}{4} = -\frac{3}{4}$. Bronze medal.

Leeds M.C.C.

The competition for the club challenge shield, value forty guineas, will take place next Saturday with a run from Leeds to London and back. Any club is invited to send three motor cyclists to join in the competition, with or without sidecars, for which a special class has been arranged. The Sheffield and Hallamshire, Harrogate, Huddersfield, Pontefract, and Doncaster clubs are sending riders, and it is hoped that the number will be increased. Full particulars can be obtained from J. R. Kelly, 25, Bridge End, Leeds The start is at 10 p.m.

Sydney (N.S.W.) M.C.C.

A record entry was made for the hill-climb at Eastwood, N.S.W., in April, and the winners proved to be—1, H. G. Clements (8 h.p. T.T. Clément-Jap); 2, E. Cooper (3½ h.p. L.M.C.); 3, D. St. Clair (5 h.p. Rex).

Mersey M.C.

The second team trials of the year were held on Saturday last, and, in spite of a break in the glorious weather, there was a good muster. The winning team consisted of V. E. Horsman (Bradbury), S. W. Phillpott (2 h.p. Humber), and W. C. Smith (3½ h.p. Singer).

North Middlesex M.C.C.

A penalty run to Reading was held on the 11th inst., and the following completed non-stop runs to time: Miss R. Hammett (2¾ h.p. Douglas),-A. E. Jennings (3½ h.p. Wincycle), J. A. Hilger (3½ h.p. Humber), T. R. Williams (3½ h.p. Premier), S. F. Garrett (5 Indian), and H. C. Mills (3½ h.p. Premier and passenger).

West Essex A.C.

The competition for the President's trophy was successfully competed for on the 11th inst. over a 100 mile course, including two well-known test hills. The result proved to be a win for the motor cycles, as follows: 1, W. E. Gunnett (T.T. Triumph), trophy and gold medal; 2, S. B. Wood (3½ Triumph), silver medal; 3, G. Glenny (Darracq), bronze medal.

Dublin and District M.C.C.

A novel competition was decided early on June 14th, in the form of a flying half-mile trial over a deserted road in the neighbourhood of Dublin. The competing machines were divided into two classes, the first machines not exceeding 520 c.c., the second unlimited. The fastest time in the smaller class was made by R. Dunphy (3½ h.p. Triumph). F. J. Walker made the fastest time in the unlimited class on an 8 h.p. J.A.P., Franklin on a 7 h.p. Indian was second, and Dunphy on a 3½ h.p. Triumph was third.

Falkirk and District M.C.C.

The results of the reliability trial on the 7th inst. have been worked out as follows:

Rider and machine.	Marks.
M. Turnbull (Rex)	300
J. McKendrick (Triumph)	300
J. Prenties (Triumph)	298
A. Smith (Triumph)	298
J. Cameron (Ariel)	298
A. McLachlan (Rex)	291

Redditch and District M.C.C.

The results of the recent speed trials are as follows:

Class I.

Rider and machine.	Fig. of merit
1. H. T. Guise (2¾ h.p. Enfield)	12,880
2. A. Myatt (3½ h.p. Triumph)	14,453
3. F. W. Viles (3½ h.p. Triumph)	14,887

Class II.

1. L. Sealey (3½ h.p. B.S.A.)	13,608
2. H. Bryant (3½ h.p. Triumph)	14,375
3. A. Myatt (3½ h.p. Triumph)	14,453

Class III.

1. H. V. Colver (2¾ h.p. Special Enfield)...	10,800
2. P. Bassett (3½ h.p. Norton)	14,179
3. H. T. Guise (2¾ h.p. Enfield)	14.547

Fastest time prize, L. Sealey, riding a 3½ h.p. B.S.A. machine.

Club News.—

Hull and East Riding A.C.C.

The result of the petrol consumption test, held on Saturday last over a route *viâ* Wawne and Leven to Hornsea and back to Hull, a total distance of about 38½ miles, was as follows: 1, A. L. Brown (3½ h.p. Rex); 2, T. Holden (3½ h.p. Triumph); 3, A. E. Tuton (3½ h.p. Bradbury). The winner's petrol consumption for the distance was only 38 ounces = $1\frac{9}{10}$ pints.

At the start of the Hull and East Riding A.C.C. Reliability Trial.

The reliability trial held on Thursday last was another unqualified success, there being fourteen entrants, of whom seven completed the course, a distance of about eighty miles. The winner was found to be J. Fletcher Walton (3½ h.p. Triumph), 6m. out; 2, E. L. Brown (3½ h.p. Rex), 7½m. out; 3, J. L. E. Emmerson (3½ h.p. Norton), 8 minutes out.

Belfast and District M.C.C.

The winners of the petrol consumption trial over a fifty miles course to Ballywalter and back *viâ* Bangor to Belfast were: 1, T. Mallow (3½ h.p. Premier); 2, J. Graham (2 h.p. Humber); 3, W. A. Conn (3½ h.p. Humber).

Cork and District M.C.C.

In the last issue R. S. Rennie was given as winner of the trial from Cork to Waterford and back. This should read R. S. Russell (3½ h.p. Matchless).

Bolton and District M.C.C.

The result of the two days' reliability run to Keswick and back on Saturday last was as follows: 1, P. J. Foster (3½ h.p. P. and M. and sc.), non-stop; 2, H. Leadbetter (3½ h.p. Bradbury), non-stop; 3, J. Fishwick (3½ h.p. Triumph), stop, sooted plug. First and second prizes were tyres given by the Kempshall Tyre Co.

Derby and District M.C.C.

The order of merit in the Whitsuntide reliability trial is as follows:

1. E. G. Boissier (3½ h.p. H. and M.), cup and heavy Kempshall cover.
2. G. Taylor (3½ h.p. Triumph), Kempshall anti-skid cover.
3. H. Baker (3½ h.p. Triumph), heavy cover, presented by Mr. E. V. Clarke.
4. J. Betts (3½ h.p. Campion), Lyso rubber belt.

Doncaster and District M.C.C.

Results of speed-judging competition, June 15th, Doncaster to Worksop, *viâ* Tickhill; distance, 16 miles:

	Rider and machine.	Average error. Difference from schedule.
1.	F. H. Dunstan (3½ Bradbury)	*0m. 30s.
2.	E. Brock (3½ B.S.A.)	†4m. 7½s.
3.	L. Bassett (3½ Rudge)	*4m. 15s.

*Late. †Early.

Cumberland County M.C.C.

At the hill-climb at Warnell Fell on June 15th, R. Drinkall (3½ h.p. Rex) proved the winner of the single-cylinder class, also making fastest time. Owing to lack of entries, the twin-cylinder class had to be abandoned. Results:

1.	R. Drinkall (3½ Rex)	69⅕s. ...	10.0
2.	F. Young (3½ T.T. Triumph) ...	71⅗s. ...	10.3
3.	J. W. Moffet (3½ Triumph) ...	72⅕s. ...	10.8
	K. McNeill (3½ Zenith)	77⅕s. ...	10.8

North Staffordshire M.C.C.

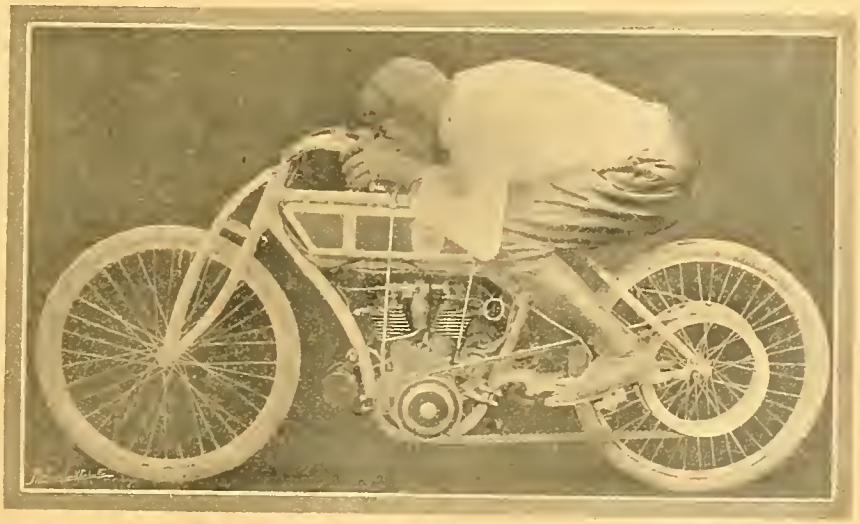
The first reliability trial was held on the 11th inst. over a 140 mile course from Hanley to Leek and back. Result: 1, H. Madeley (3½ h.p. Lincoln Elk), gold medal; 2, C. E. Fowke (3½ h.p. T.T. Triumph), silver medal; 3, A. Miller (3½ h.p. Triumph).

The thanks of the club are due to the Manchester M.C., who checked at Hazlegrove, and to the Sheffield and Hallamshire M.C.C., who took charge of the controls at Bakewell (twice) and at Sheffield.

MONDAY'S PRACTISING ON THE T.T. COURSE.

Practising for the forthcoming Tourist Trophy Races continued on Monday morning at 3 o'clock in ideal weather. Many competitors completed two circuits, including De Rosier, who took only 43m. to complete a circuit on his 7 h.p. Indian (which he is using for practice), hitting some sheep which strayed on to the mountain road. On Monday riders of Rudge, Triumph, Douglas, Enfield, and New Hudsons were in the island. F. Straight, secretary of the Auto Cycle Union, arrived in the island on Sunday, and examined the warning flags which are placed before every bad corner. Elaborate arrangements are being made for the safety of the competitors in view of the difficult course, and very rough road surfaces owing to continued drought. Snaefell is particularly bad and strewn with loose stones. Every morning crowds watch the practising.

The Humber, Ariel, Bat, Matchless, and Premier riders were expected to commence practice yesterday (Wednesday). There were twenty competitors practising on Monday, and still more on Tuesday.



M. Gassert and the twin-cylinder lightweight N.S.U. he has entered for the Junior T.T. Race.

CURRENT CHAT

TIME TO LIGHT LAMPS

JUNE	22nd	..	9 19	p.m.
,,	24th	..	9 19	,,
,,	26th	..	9 19	,,
,,	28th	..	9 18	,,

Next Week.

The Motor Cycle T.T. and Summer Number. This issue will be greatly enlarged, and will contain special articles and illustrations of current interest.

R.A.C. Associates' Race Meeting.

The Motor Cycle has offered a cup for the Short Distance Motor Cycle Race, which will be held at the above meeting at Brooklands.

The Coast Ride.

F. Dover left Southend on the 18th inst. on his journey South, having ridden on the three previous days from Sunderland to Bridlington, Bridlington to Kings Lynn, and Kings Lynn to Southend. Details of his daily journeys from Liverpool up to and including Sunderland, will be found on page 619. The distance from Sunderland to Southend by the coast road is 483 miles.

Excursions to the Isle of Man.

E. G. Young, Trent Bridge, Nottingham, is again organising a party for the T.T. races in the Isle of Man. The train leaves Nottingham at 7.20 on Saturday and Sunday nights, July 1st and 2nd, catching the midnight boats at Liverpool. Tickets Saturday to Monday, 14s 6d., Sunday to Monday 14s. 2d.

The hon. sec. of the Coventry and Warwickshire M.C. is also endeavouring to organise a saloon party for the week-end.

W. W. Douglas on the 2¾ h.p. two-speed Douglas on which he is practising for the Junior T.T.

SPECIAL FEATURES

THE TEAM TRIAL — 20 CLUBS COMPETE.
TOURIST TROPHY NOTES. LONG DISTANCE RIDES.

The Harry Smith Gold Cup.

This handsome trophy has been presented to the Motor Cycling Club by Mr. Harry Smith, the managing director of the Rover Co., Ltd. It is to be competed for as a challenge trophy for motor cyclists, to become the property of the rider winning it three times in all, not necessarily in succession. The first contest for it over a distance of ten laps—twenty-seven miles—will take place at the M.C.C. Brooklands meeting on July 8th. The winner, besides holding the cup for a year, will become the possessor of a replica in silver, given by the M.C.C.

Derby Club's Preparations.

A letter from the hon. sec. of the Derby club relates how his team prepared for the Team Trials. Entries were invited from all club members, and the committee selected a dozen as the likely team. The team and reserves finally chosen were all out to win the cup. New plugs, tyres, belts, and nail catchers were compulsory, and the equipment of each machine had to undergo a rigorous inspection by a sub-committee. The Red Lion, Banbury, was selected as the headquarters. At the start the sidecar driving wheel tyre was quite flat and a hurried repair was effected. The Derby team had a flying relief column who handed up supplies of refreshment on the run. Mr. A. B. Bennett, the secretary, concludes: "The success of the team is attributed to careful organisation, thorough overhauling and preparation of machines, and the keenness and determination of each man to win a trophy which we rightly regard as the Blue Riband of the motor cycle world."

The Ten Feet Line at Brooklands.

On Saturday last one of our staff took special observation of the men passing under the members' bridge, the point where the Brooklands authorities state that the men ride furthest from the edge of the track. Careful notes were made on both sides of the bridge, and it was found that most of the competitors ride from twenty-five to thirty feet from the edge, one man alone kept inside the line, and Godfrey who was mounted on the fastest machine in the race, was quite twenty-five feet from the edge. On the second occasion on which the men passed under the bridge the leader was well outside the fifty feet line, and Surridge, Forgan-Potts, and Godfrey were between twenty-five and thirty feet away from the inner boundary. Touching this question McNab, who, by the way, has been doing wonderfully well lately, assured us that no rider travelling at record speeds could help riding far out near the members' bridge, and, moreover, the top end of the track was far too rough to allow one to keep inside the ten feet line.

The De Rosier v. Collier Match.

At the B.M.C.R.C. meeting which will be held at Brooklands on Saturday, the 15th July, the long talked of match between C. R. Collier and Jake de Rosier will take place. This will be the first important international match which has taken place in this country for some years, and some exciting contests between the two crack men are anticipated. De Rosier will ride his famous No. 21 7 h.p. Indian racer, which he has had for three years, and on which all his noteworthy performances have been accomplished. There will be three races of five, ten, and twenty-five miles respectively, the winner to be he who makes the best two performances out of the three. The prize put up will be £130, the winner to take seventy-five per cent. of the total.

A. H. Alexander and the 2¾ h.p. Junior T.T. Rex he will ride in the Isle of Man. The same rider will bestride a water-cooled 3½ h.p. Rex in the Senior event.

ell-deserved Sentence.

S. Thomas, M.R.C.V.S., Chi-er, was riding his motor bicycle e Market Road, Chichester, when a rer named Macdonald kicked at ront wheel of the motor bicycle, and the motor cyclist dismounted to what the man meant by such con- he was met with abusive language Macdonald, who attempted to lt him. Mr. Thomas summoned the in the public interest, and the sentenced him to a month's hard r.

News for Motor Cyclists.

tor cyclists will welcome the news the Commissioner of Metropolitan e has decided to take steps to e slow traffic to keep to the kerb. councils of Kensington, Westminster, Hammersmith, have been notified if they will affix notices to drivers e lamps on refuges the Commissioner provide mounted policemen to keep eye on drivers of slow-moving les and will also instruct constables oint duty to direct slow-moving to hug the kerb. As soon as the cils mentioned have given their nt and the notices are affixed, the iment will begin.

e Traps.

the Rickmansworth-Slough Road, side of the hill between Hyde and am.

the village of Compass three miles Launceston on the main Launceston-in Road.

e police are very active in the bourhood of Blackburn. Two traps are moved frequently are in work-order between that town and on, and one on the Longsight Road the village of Meelor Brook to Bil-on. It is said that proceedings are for any speed in excess of twenty per hour.

tor cyclists are advised to drive with me caution both in Richmond (the ile limit, throughout the whole t of the latter) and on the Sheen . The police are very active, and Bench fine motorists in the most itant manner. Recently a motor t was fined £5 for exceeding the ten-limit in Richmond and £2 for not g a licence, and an order was made e endorsement of any future licence ight take out.

ours' Trial in New Zealand.

correspondent sends us an interesting nt of the New Zealand Motor Club's twenty-four hours' reliability trial, took place at the end of April, and d to be a severe test both for ines and riders. The start was from ington, and the furthest outward Waipawa, and competitors were to e to a pace of 14 m.p.h. during dark-and 20 m.p.h. in daylight. The er proved to be R. S. Bender, with Hislop a very close second. Apart the general reliability of modern r cycles and the splendid pluck and ance of the riders who finished, the demonstrated the shocking state of oads in New Zealand at this time of ear and the necessity for proper sign-some riders having failed through their way on the narrow and often dangerous roads. A movement is now on foot to establish a governing body on the lines of the A.C.U. in England, to which all clubs will be affiliated and the sport generally benefited by a large increase in local clubs and proper and effective organisation at headquarters. Road improvements would probably be one of the first objects for which such a controlling body would bring its undoubted influence to bear upon the Government and local authorities.

FUTURE EVENTS.

June 29—"THE MOTOR CYCLE" SUMMER AND T.T. NUMBER.
" 30—Junior T.T. Race in the Isle of Man.
July 3—Senior T.T. Race in the Isle of Man.
" 4—Kilometre Speed Trial on the Douglas Promenade, Isle of Man.
" 8—A.C.U. Met. Centre Eliminating Trial for Club Championship.
" 15—A.C.U. Mid. Centre Open Hill Climb.
" 22—A.C.U. Quarterly Trial (Northern).
" 28—Bradford M.C.C. Open Hill Climb and suggested speed trials.
" 29—R.A.C. Associates' Gala Day at Brooklands. Cars and Motor Cycles
Aug. 7-8—Dublin and District Open Two Days Reliability Trial.
" 14-19—A.C.U. ANNUAL SIX DAYS' RELIABILITY TRIAL. HARROGATE AS A CENTRE.

Disqualifications in London-Edinburgh.

Quite a number of competitors who reached Edinburgh within schedule time in the M.C.C. London-Edinburgh run will be surprised to find they are not included in the medal list on page 617 of this issue. The M.C.C. committee disqualified upwards of a dozen competitors who were found to be more than fifteen minutes ahead of the time schedule at some point on the route.

Lightweight Long Distance Record.

An Edinburgh motor cyclist, A. A Hay, is contemplating an attempt to set up a six days' lightweight long distance record on the road, and may ride an A.J.S.

Auto Cycle Union News.

THE P. AND M. TRIAL.—W. Pratt's postponed long distance trial on a P. and M. will commence on Monday, July 10th, and will end Saturday, July 15th. M. G. Duncan will act as the official observer.

TIMEKEEPER.—F. T. Bidlake has been appointed a timekeeper to the Auto Cycle Union.

THE R.A.C. AND ASSOCIATED CLUBS' RACE MEETING.—On the occasion of the Royal Automobile and Associated Clubs' race meeting, which will be held at Brooklands on July 29th, there will be two motor cycle races. The first will be a short distance event of one lap open to any type of machine, owned and ridden by a member or the member of a club affiliated to the A.C.U. The second event will be the Auto Cycle Union inter-club team race, to be competed between teams of three riders named by each affiliated club, of which one rider shall be mounted on a single-cylinder machine not exceeding 500 c.c., the second on a multi-cylinder machine not exceeding 670 c.c., and the third on a passenger motor cycle up to 1,000 c.c. Competitors' machines must be in full touring trim. The entrants will be given marks according to their relative finishing position, *i.e.*, the first man over the finishing line one mark, the second two marks, and so on, the winning club to be the one the team of which obtains the least number of marks.

PERMIT.—A permit has been granted to the Cambridge Flower Show to hold motor cycle races on July 7th.

H. V. Swift (2¼ h.p. Douglas), a successful competitor in the M.C.C. London to Edinburgh run, who is attempting a six days' record, riding 16 hours per day, not exceeding the 20 miles per hour limit. Our photograph was taken as he started from Sheffield early on Wednesday morning last week.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Embarrassing Explosions.

I have a 3½ h.p. Minerva motor cycle, 1904 pattern, and I am troubled with it banging off when I lift the exhaust valve. Sometimes it will bang off half a dozen or more times in rapid succession, which is very annoying in traffic. Shutting off air does not seem to make any difference. Could you tell me how to alter it?—NOVICE.

The trouble may be due to the fact that the exhaust valve lifter does not lift the valve sufficiently high. We take it that you switch off the current and close the throttle.

Licence Duties.

(1.) What will be the licence duty for a car made on the principle of the tandem-seated runabout illustrated in a recent number of *The Motor Cycle*, about 5 h.p.? Also are motor cycle tyres strong enough? (2.) Also what is the licence duty for a tricar?—A.W.

(1 and 2.) The licence duty will be exactly the same as that for a car, namely, £2 2s. local taxation licence, £1 registration. The licence duty for a three-wheeled vehicle would be £1. If it weigh over 3 cwts., it has to carry car numbers and car registration fees must be paid. (3.) If the vehicle is not over 4 cwts. 2½in. motor cycle tyres should be strong enough.

Lubrication.

(1.) How much oil should I give my 3½ h.p. machine when taking a sidecar; that is, what proportion more than when driving solo? (2.) Is it well to try and oil the engine when it is climbing a hill, rather than just to give it oil in relation to mileage? (3.) I have had my cylinder head off to clean, and I find the valves very black, and around the inlet especially there is a lot of oily matter. Is this because I nearly always put in some paraffin after coming in so as to make starting easy, or should I try thinner oil? I use Vacuum B brand oil.—W.D.

(1.) It all depends upon the work you give the engine to do. Half a pumpful every five miles when you are using a sidecar; about one pumpful every fifteen miles when driving solo. (2.) You should oil the engine just before beginning to climb a hill, if the hill is likely to be a severe one. (3.) Probably the oily condition of your valves is due to the oil leaking past the piston rings.

Gear Changing.

I have recently purchased a new No. 7 Chater-Lea and sidecar with a J.A.P. engine. There is just a question or two I should like to ask you. (1.) Directly I put the machine on top gear after it has run about a mile or so it jumps out of gear by itself. (2.) It is also very difficult to change into the low gear. Do you think the clutch is set too tight? The pedal is very stiff, also the lever in quadrant on top of the machine.—F.C.

The jumping out of the gear is generally caused by the change-speed mechanism being strained. You should see that when the lever is in the top gear notch the dogs are fully engaged. If they are not, set the adjusting lug on the rod that slides in and out of the gear box until the desired result is obtained. Be sure to declutch when changing speed. Perhaps if you slack out the clutch spring a little until you get the knack of changing speed it may help you. Also take care that the changing mechanism does not foul the footboards.

Raising the Petrol Level.

My machine is a 3½ h.p. T.T. Triumph, 1911. (1.) If I fit a larger jet, could I raise the petrol level by putting weight on top of carburetter float, and if so about what weight would be required? I know it can be done by altering weights on needle, but prefer not to disturb the adjustment. (2.) If I were to advance exhaust timing wheel by, say, one tooth, leaving inlet wheel as at present, what would be the result? I understand that the exhaust valve would open and close earlier than at present, but would like to know if it would give any increase of speed or better hill-climbing results.—H.W.B.

Yes, you can alter the level of the petrol in the carburetter temporarily by putting a weight, such as a small washer, on the top of the float. As to what weight is required, this can only be found out by careful experiment. We should not recommend you to interfere with makers' setting of exhaust timing, which has been arrived at after years of experience.

Ivan B. Hart-Davies at the start of his End-to-end Record Ride on a 3½ h.p. Triumph, John-o'-Groat's 3 a.m., June 12th. His time was 29 hours 12 mins.

Misfiring.

I ride a 3½ h.p. Fafnir with sidecar, and I have had fitted a two-speed gear and free engine, also new rings. I am troubled with constant misfiring; the engine will run on the high gear only for a few yards or so and then stops. Have tried magneto, compression, the old rings, spark, and different sizes of jets in carburetter—all to no good purpose. I should be much obliged if you could enlighten me on same.—H.S.H.

The only cause of the trouble of which we can think is that in taking down the engine you have not seen that the inlet pipe joints are airtight. In consequence the engine draws air partly through the joints instead of through the orifice below the jet. If you have not done so, try a change of sparking plugs, and examine the magneto carbon brush.

Obstruction in Petrol Pipe.

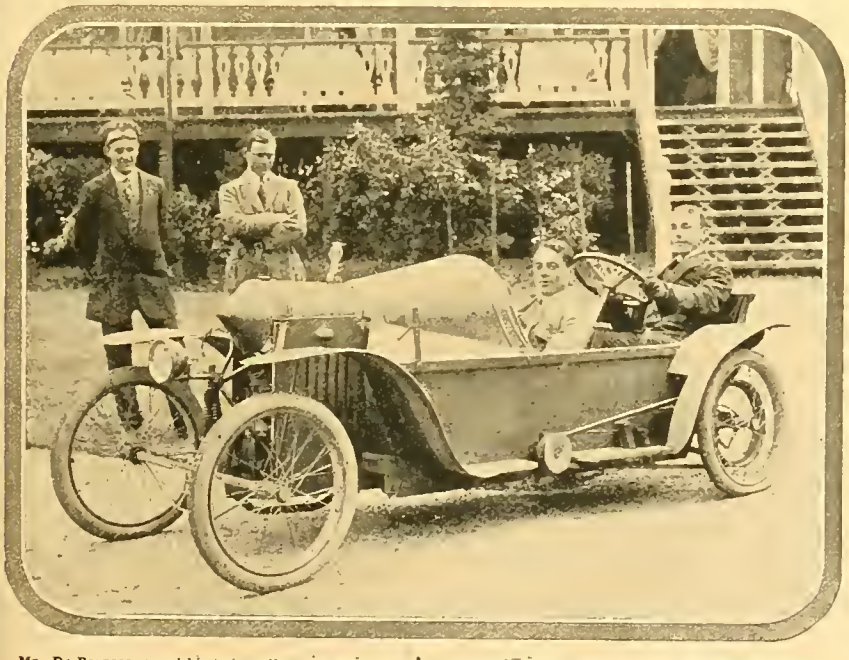
My machine is a 1908 Vindec, 1911 B. and B. carburetter, and I have been troubled lately with occasional misfires and refusal to take as much air at slow speeds as formerly. I have had new contacts (Jebron) fitted, and a new fibre ring. This has stopped the misfiring, but still the machine will not take as much air as formerly. I notice that after twenty miles' running the new contacts are black and slightly pitted. If I press the button on the top of the float chamber petrol issues out around the lid of same, whereas it used to drip from the hot air funnel. At higher speeds the machine runs very well, but when going slowly explosions are much louder than previously.—C.W.F.

The trouble is undoubtedly due to a partial obstruction in the jet or petrol passages, probably the jet. The pitting of the contact points is due to a bad connection between the condenser terminals, namely, the flat spring holding on the cover and the brass cap.

Carelessness of Repairers.

Being unable to remove the inlet inspection cap of my 3½ h.p. motor cycle engine, I took cylinder and piston to the makers for them to remove cap (the hexagon top of same being partly broken away) and to fit a new gudgeon pin, the old one being loose. After about ten days I wrote asking if the repairs had been done, and received the following reply: "In reference to the cylinder left to have the inspection caps removed and new ones fitted, one of these caps was so firmly rusted in that the cylinder broke in attempting to remove it. The cost of a new cylinder will be 30s., inspection cap for exhaust valve 3s. 2d., piston complete 19s. 3d. If you will send remittance for these items we will send them along." The work I asked them to do was a matter of a few shillings only, and now they ask me to pay in all £3 15s. 11d., which is entirely owing to their having broken the cylinder; I presume I should have a further expense in the way of valves. Do you not think they should supply me with cylinder and piston at the price of the repairs I asked them to do? I might mention the engine was in good running order, and was run up to the night before I took it to them? I should be glad if you will tell me my legal position, as I do not feel inclined to go to the expense of purchasing a new cylinder, etc., in consequence of the carelessness of people employed to effect repairs.—LUCIEN AUFHOLZ.

Our legal adviser writes: If Mr. Aufholz satisfies the Court that the expense he is asked to go to is in consequence of the carelessness of the repairers, he has a good cause of action. They doubtless take the opposite view, as their letter shows. Your correspondent must prove negligence to enable him to be successful in a legal action.



Mr. De Peyrecave and his twin-cylinder Bedelia at the meeting of clubs affiliated to the Metropolitan Centre of the A.C.U. at Caversham-on-Thames.

Misfiring at Low Speeds

(1.) I have a twin machine of recent date which goes well, but I cannot get it to fire evenly under thirty miles an hour with magneto fully advanced. Can you tell me how to make it run more slowly without retarding magneto, if it is possible? (2.) Can you tell me how I can cut out one cylinder for running through towns, etc.? If so, does this do any harm?—A.B.

(1.) There are several reasons why a machine might not fire at slow speeds: (a) Too much air to the carburetter when trying to run slowly—as much air as possible should be excluded; (b) too wide a gap at the sparking plug; (c) too strong inlet springs. (2.) This can be done by adjusting your exhaust valve lifter so that one cylinder is cut out before the other. Exactly how to do this we cannot tell you without knowing the details of your machine. Any motor cycle expert would show you how to effect this alteration. It does no harm, but the working cylinder gets hot.

Engine Stops on Opening Throttle.

Will you help me with my Motosacoche? The facts are as follows: Engine runs on stand, but won't run twenty yards on the road. There is a loss of power. Compression is good, and the back wheel skids on road with exhaust valve down, but the engine will not answer throttle. I start with the throttle just open, and when opened wide the engine either stops or it makes no difference in speed. I have tried it with the silencer off, but it is still the same. I can only come to the conclusion I haven't timed the magneto right. I timed as follows: Piston dead centre, ignition retarded, points of magneto just separating, but I find in fitting contact breaker on armature shaft I have to work engine pulley round a bit, then the piston must be going down again. I sent magneto to Bosch Co. to have same re-magnetised. Do you think they have altered it?—NOVICE.

We think it quite possible that the trouble might be due to your not opening the air after you have started. Naturally, with the small air lever closed and the throttle open the carburetter immediately becomes choked, and this would quite account for the symptoms you refer to. Evidently you have timed the magneto quite correctly, and we do not think this is at fault.

EXPERIENCES WANTED.

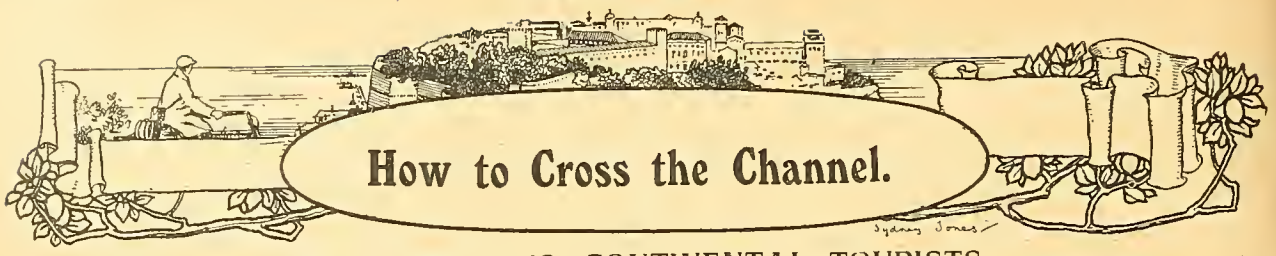
"A.L.L.S." (Oxon). Binks two-jet carburetter. Is it suitable for a Lagonda tricar, and can the change from Longuemare to Binks be easily made?

"H.B." (Putney). 7 h.p. T.A.C. and 7 h.p. Indian two-speed with sidecar, particularly as regards control in traffic, hill-climbing, flexibility, and tyre upkeep.

"E.O." (Barnsley). T.A.C. 1910 and 1911 models.

"G.D.E." (Dublin). Automatic carburetter of 1911 3½ h.p. N.S.U.

"A.S.H." (West Africa). 8 h.p. Chater-Lea, Matchless, and Bat, particularly with regard to tyre wear.



How to Cross the Channel.

OF INTEREST TO CONTINENTAL TOURISTS.

BEING situated as we are on an island, it is necessary whenever we wish to extend the scope of our tours to go down to the sea and take ship. I believe that this fact has been the means of preventing many a motor cyclist from going abroad for the pleasurable experiences that are bound to be met with in a foreign country—a strange people and different manners. Some fight shy of the crossing because they have an idea that it is expensive and entails much worry and bother, whilst others—well, lots of us know what it feels like and can sympathise!

It is obviously beyond the scope of such a short article as this for me to deal with all the many and various ways it is possible to cross from England to the Continent, and to Ireland; any attempt, to be at all adequate, would, I think, fill up a whole issue of *The Motor Cycle*. The following routes are confined to the recognised cross-Channel packets belonging to the various railway companies:

GREAT EASTERN RAILWAY.

HARWICH to—
Hook of Holland, for Holland and N. Germany.
Antwerp for Belgium, the Ardennes.
Luxemburg, C. and S. Germany, and the Rhine.

Time of Passage.
To the Hook about seven hours. Fares (single) 19s. 1st, 13s. 2nd.
To Antwerp about eleven hours. Fares (single) 16s. 1st, 10s. 2nd. Motor cycle, 4s. 6d. Tricar, 11s. 3d.

Steamers.
Largest, 2,600 tons. Smallest, 1,300 tons. Turbine service to the Hook.

Sailings.
Every night at 10 o'clock.

DANISH ROYAL MAIL STEAMERS (Del Forendi line).

HARWICH to—
Esjberg, Denmark, for Copenhagen.
N. Holland, N. Germany, Norway and Sweden.

Time of Passage.
About twenty-four hours. Fares (single) £1 15s. 1st, steerage 15s. Motor cycles, 7s. 6d. and 10s.

Steamers.
About 2,000 tons.

Sailings.
Monday, Wednesday, Friday, Saturday, at 9.45 p.m.

GENERAL STEAM NAVIGATION CO.

HARWICH to—
Hamburg for N. Germany.

Time of Passage.
About thirty hours.

Sailings.
Wednesday and Saturday, 10.30 p.m.

GREAT WESTERN RAILWAY.

PLYMOUTH-BREST for—
Brittany and West France.

Fares.
Saloon 17s. 6d., 3rd 12s. 6d. Motor cycle, about 7s.

Sailings.
Saturdays at 8 a.m.

WEYMOUTH-CHANNEL ISLANDS—
In conjunction with L. and S.-W.R. steamers.

SOUTH-EASTERN AND CHATHAM RAILWAY.

QUEENBORO'-FLUSHING (Zeeland line) for—
Holland, Belgium, Germany, Russia, etc.

Steamers.
Night—three of 3,000 tons, 10,000 h.p., twin screw (turbine). Day—three of 2,000 tons, 9,000 h.p., paddle. Wireless telegraphy. Passage 7-8 hours.

Fares.
1st, £1 6s.; 2nd, 15s. Motor bicycle, 7s. 6d.; tricar, 30s.

Sailings.—Daily, Sundays included, at 11.10 a.m. and 10.15 p.m.

DOVER-OSTEND for—
Belgium, etc.

Steamers.
Turbine and paddle. Crossing about four hours.

Fares.
1st, 9s.; 2nd, 7s. Motor cycle, 4s. per 112 lbs.

Sailings.—Daily at 11 a.m., 4.30 p.m., and 11 p.m.

DOVER-CALAIS for N. France, Paris, Belgium, etc.

Steamers.
1,600 tons. Wireless telegraphy. Crossing, one hour.

Fares.
1st, 10s. 11d.; 2nd, 8s. 11d. Motor cycle, 6s.; sidecar, 3s.

Sailings.—Daily at 11.5 a.m., 1.0 p.m., and 11.5 p.m.

FOLKESTONE-BOULOGNE for France generally.

Steamers.
Same as Dover-Calais.

Fares.
1st, 9s. 5d.; 2nd, 7s. 5d. Motor cycle same as Calais.

Sailings.—Twice daily at 11.55 a.m. and 4.10 p.m.

LONDON AND SOUTH-WESTERN RAILWAY.

SOUTHAMPTON to—
Havre, for Normandy, Paris, etc.
Cherbourg, Normandy.
St. Malo, Brittany, and West of France.
Channel Islands and Granville.

Fares (Single) and Motor Cycle Carriage.
Havre.—1st 24s., 2nd 18s. Motor cycle, 5s.
Cherbourg.—1st 21s., 2nd 15s. Motor cycle, 4s.
St. Malo.—1st 24s., 2nd 18s. Motor cycle, 6s.
Channel Isles.—1st 20s., 2nd 14s. Motor cycle, 5s.

Steamers and Time of Passage.
Havre.—1,150 tons. Passage, seven hours.
Cherbourg.—700 tons. Passage, six hours.
St. Malo.—1,200 tons. Passage, ten-eleven hours.
Channel Isles.—1,200 tons. Passage, six hours.

Times of Sailings.
Havre.—Midnight Tuesday, Thursday, and Saturday.
Channel Isles.—12.30 a.m.
St. Malo.—Tidal.
Cherbourg.—Same as Havre.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

NEWHAVEN-DIEPPE for—
Normandy, Brittany, Paris, and Continent.

Steamers.
3,500 h.p.-6,500 h.p. Crossing, about four hours.

Fares.
1st, 17s. 10d.; 2nd, 13s. 6d.; 3rd (night only), 10s.
Motor cycle up to 120 lbs., 8s.; 6d. per extra 10 lbs.
Tricar or sidecar, 21s.

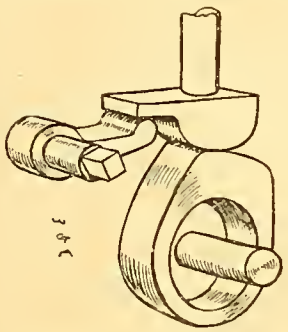
Sailings.—Daily at 11.30 a.m. and 10.25 p.m.
There is also a service *viâ*

NEWHAVEN-CAEN for—
Lower Normandy and Upper Brittany. Fare, 15s.

PETROLIA.

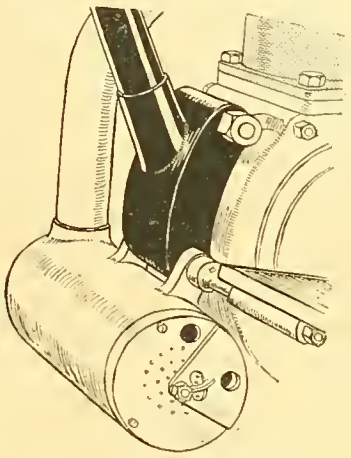
A NEW MODEL—THE 3½ h.p. ALLDAYS.

DURING a recent visit to Birmingham we had an opportunity of inspecting the 3½ h.p. machine which Messrs. Alldays and Onions are placing upon the market. This machine was designed some months ago, but it has since undergone long road tests and several alterations, and is now thoroughly up to date in every respect. The lines of the design are conventional, and comprise an 85 × 88 mm. engine with ball bearing crankshaft, Amac carburetter, chain-driven Bosch magneto, Druid spring forks, and two-speed gear and free engine hub. The last is the well-known Millennium, and a very notable feature of the machine is that with the two-speed gear it is produced at a price which compares very favourably with that of almost any ordinary single gear model.



Design of valve cam and tappet.

We illustrate herewith the complete machine and two or three small details which seem to us worthy of note. The illustration representing the arrangement of the valve tappets shows that no rocking lever is interposed between the cam and the push rod. The latter is furnished with a hardened shoe, which falls direct on the face of the cam. The sketch also shows the neat manner in which the exhaust valve lifter is applied to this shoe. The engine is held in the usual vertical position in the frame, a very good point being the use of strong and neat-looking box type castings, which serve as lugs for the attachment of the cycle tubes to the crank case. This point is brought out, together with the arrangement of the silencer and cut-out, in the second illustration, which also indicates the position of the neat rubber-covered aluminium footboards. The third sketch shows the manner in which the front mudguard is mounted so that its stays do not interfere with the detachment of the front wheel. It will be seen that no disadvantage whatever accrues from placing the stays as shown, whilst, on the other hand, in case of a puncture, a great deal of time and unnecessary trouble is likely to be avoided. To remove the wheel, it is not necessary to touch the mudguard in any way.

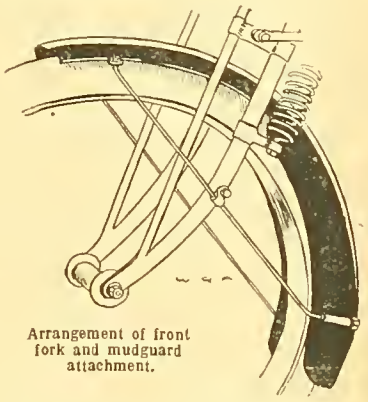


Position of silencer and cut-out.

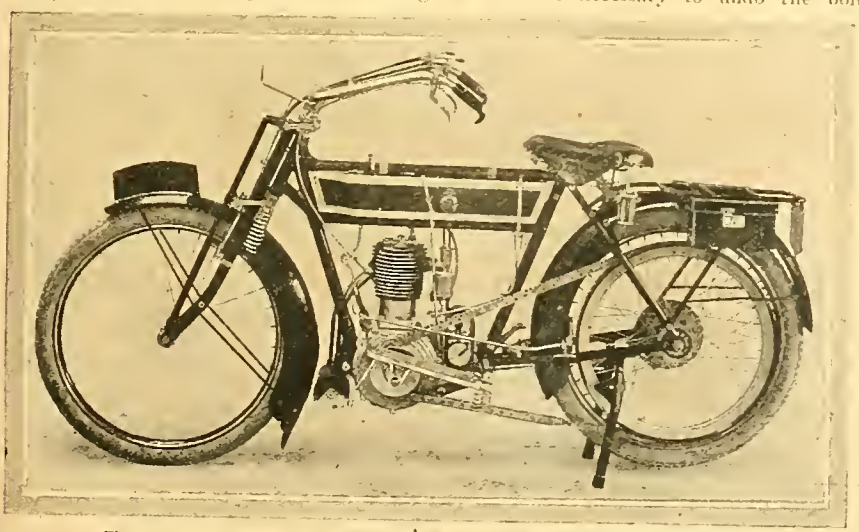
Another very excellent point which shows that the 3½ h.p. Alldays has been designed by men with practical road experience is that the larger half of the back mudguard is rigidly attached to the tubular carrier, and in the case of a puncture both carrier and guard are completely and immediately detachable by merely slackening four small bolts. It is not necessary to undo the bolts completely, as the legs of the carrier have their ends slotted and countersunk. To remove the carrier and guard is a matter of a very few seconds, and when they are out of the way access to the tyre is practically complete.

A handle starting device is used. This is mounted on a bracket attached to the right side of the rear saddle stay, the transmission from the detachable handle to the belt rim being by chain.

Altogether, the 3½ h.p. Alldays is a machine which is very complete in all respects. No pains have been spared to make it thoroughly efficient, as well as comfortable and reliable. As we have inferred, the price is remarkably low considering the general finish and workmanship, and we have no doubt that it will appeal strongly to a large section of motor cyclists.



Arrangement of front fork and mudguard attachment.



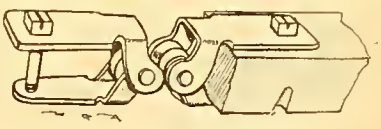
The Alldays 3½ h.p. two-speed model with m.o.i.v. 85 × 88 mm. ball bearing engine.

Whitsuntide Wins.

Ariel successes at Whitsuntide included the London-Edinburgh run, four gold medals; London-Edinburgh and back, three gold medals; Birmingham-Land's End and back, Lycett trophy and two gold medals; and first in the Burnley A.C. reliability trial. In hill-climbing, third place on formula in the single-cylinder class, and fastest time of the day were accomplished on these machines at the Newcastle and District M.C.C.'s event.

A New Fastener.

Herwin, Canny, and Co. 36, William Street, Woolwich, S.E., who were early in the field with a satisfactory belt fastener for V belts when the latter first came into vogue, have just brought out a new form of their Simplex fastener, which



New Simplex detachable fastener.

should appeal to our readers. It is made detachable, and the upper portion of each link is capable of being hinged open, so that it can easily be placed on the belt. The fastener is well made of steel stampings. The screws employed are, it will be seen, square-headed.

Insurance.

Among those insurance brokers who have arranged for a special policy for competitors in the forthcoming Tourist Trophy Races is Mr. E. J. Bass, Bishops Stortford, Herts.

"Motoring in Lakeland."

The Anglo-American Oil Co. have just issued a booklet of motor trips in the Lake District which will be found of service to those who contemplate touring in this lovely portion of the British Isles.

Brooklands Successes.

It is worthy of note that the first, second and third machines in four of the races at the A.C.U. race meeting at Brooklands had Bosch magnetos fitted.

Shamrock Gloria belts were very much to the fore at the A.C.U. race meeting, these belts being fitted to machines which gained four first places out of five races.

Out of the four races held by the Auto Cycle Union at Brooklands, three first and three second places were secured by machines fitted with Hutchinson tyres, and we are assured that not the slightest hitch was experienced by any of the riders.

A Good Test Run.

The 3½ h.p. New Hudson three-speed motor cycle had a good testing during Whit-week, as it was ridden about a thousand miles in six days. The route taken was Birmingham to London, through the London-Edinburgh run (an ascent of Arthur Street, with its steep gradient), Edinburgh to Glasgow and Stranraer, then boat to Larne, Larne to Belfast and Dublin, boat to Holyhead, Bangor, Corwen, Bala, up Dinas Mawddwy Hill, through South Wales and back to Birmingham. During the run demonstrations were arranged before local motor cyclists at Balmano Brae, Glasgow, and on a hill on a by-road in Ireland near the Creagh rifle range. The rider, Roy W. Walker, weighs about 13 stones, and carried in addition about 35 lbs. of luggage.

Sidelets

A Sidecar Mat.

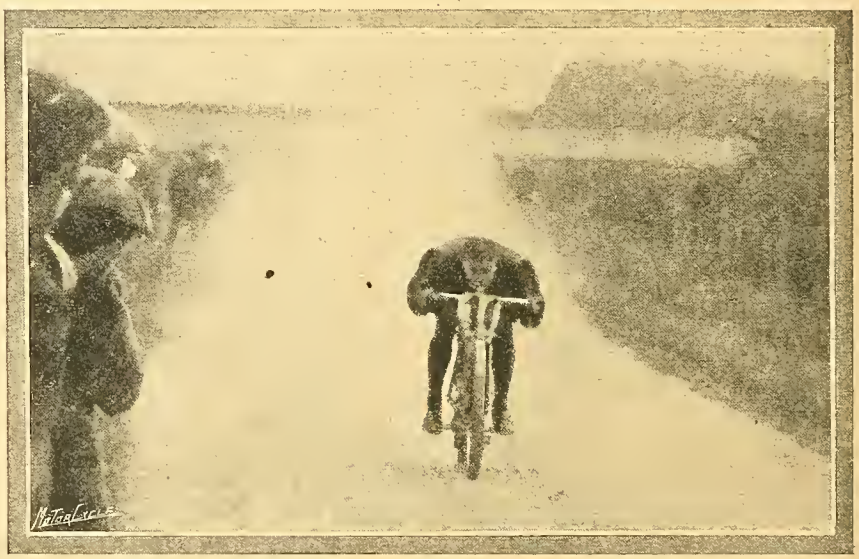
One of the best means of absorbing vibration arising from the footboard of a sidecar is to provide the footboard with a fairly thick cocoanut mat. Maude's Motor Mart, 136, Great Portland Street, London, W., have sent us an example of a neat mat for this purpose which they have just introduced. It sells at a very reasonable price, and will doubtless fill a strong demand among sidecar owners.

Catalogues Received.

No enthusiastic motor cyclist should be without the pocket edition of Brown Bros.' motor catalogue, one of the most complete compendiums of motor accessories, fittings, and sundries. Copies can be obtained on application to the firm at Newman Street, Oxford Street, W.

New Home of P. and M.

Phelon and Moore, Ltd., have moved their London depot to 4, Percy Street, Tottenham Court Road, three minutes from the tube station. These premises will constitute one of the largest motor cycle depots in London fitted with a fully equipped workshop and hydraulic lift for handling machines. In addition, arrangements are being made to exhibit a full range of Montgomery sidecars for which this firm are sole London agents.

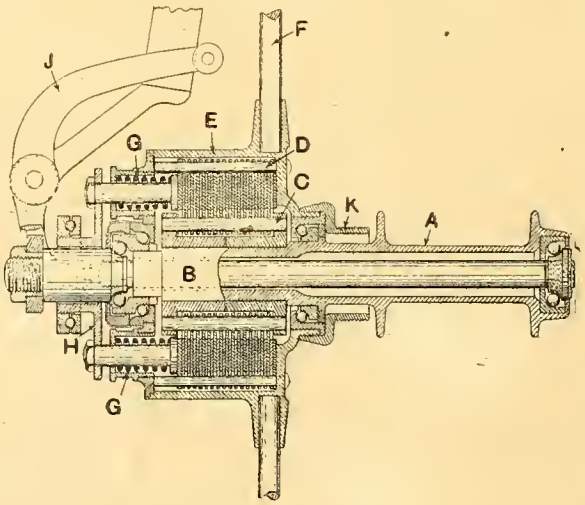


J. D. Mitchell (3½ h.p. Triumph) at full speed in the Clipstone speed trials described in our last issue. He covered a mile at 54 m.p.h. from a standing start.

PATENTS.

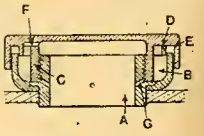
A Hub Plate Clutch.

This clutch is somewhat similar to the construction used on the Triumph motor bicycle with the main difference that the clutch plates, etc., are arranged outside the hub shell. The hub shell is shown at A, being mounted upon a fixed spindle, and the shell is extended to form a sleeve B. This carries rotating with it a sleeve on which are mounted rods C, upon which the driven clutch plates are threaded. The driving clutch plates are threaded on rods D carried by the sleeve E, which forms the driving clutch member, and to which the belt pulley spokes F are attached. The clutch plates are pressed together by springs G, and the pressure of these springs is removed by moving to the left a plate H by means of the lever J. The free-wheel clutch is mounted at K on the driving member E, so that when pedals are used the engine is always rotated, and when the clutch is disengaged the engine alone is driven. It will be noticed that the pedalling chain runs between the belt pulley and the wheel.—Abingdon-Ecco, Ltd., and J. Gray, No. 10,110, 1910.



The B.S.A. Filler Cap.

The filler A is formed with an annular receptacle B, and its cap carries flanges, the inner one C of which is screwed to engage the filler, and the outer ones D E, so spaced as to lie one on either side of the outer wall of the receptacle B. A vent F is provided, and holes G are formed in the bottom of the receptacle. Thus, any petrol or oil escaping through the vent, or past the thread, is caught in the annular receptacle, and, when the cap is unscrewed, returns to the tank by way of the holes G.—Birmingham Small Arms Co., Ltd., and R. Nicholls, No. 9,312. 1910.



THE MOTOR CYCLE

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ADDRESS: 20, TUDOR STREET, LONDON, E.C.

Comparisons.

'T is an old saying that comparisons are odious, but we do not think anyone will accuse us of unpleasantness if we animadvert upon the remarkable differences in the ways in which prominent motor cyclists seek their pleasures and satisfy heir ambitions in the use of their machines. The nd-to-end record-breaker's idea of the finest sport existence is to cover the classic route from north to outh or *vice versâ* in the shortest possible time. A w tumbles do not upset his equanimity or ruffle his elings, so long as the coveted record is achieved nd a halo of evanescent brilliance surrounds s name. He goes without sleep, and exists practically without food for about thirty hours, to prove hat he has sat his machine for 900 miles while it urtled him along at an average of thirty miles an our. Contrast the above with the six days' record-reaker; he wishes to prove his staying powers at a ower average speed spread over a longer time. robably he would fail to secure the record for the norter distance because he would just fall short of he requisite dash to maintain a very high average peed. Again there is another type: the rider who, hile absolving himself from all semblance of a record erformance, has an ambition to traverse the whole f the coast line of the kingdom at average touring peeds, using one machine throughout, and recording is various days' journeys on postcards which he posts o us each night to verify his statements.

In all this there exists a tinge of desire for fame, ut above it stands pre-eminent the 'lofty aim' to how the public what can be done on a motor cycle—uly a most wonderful piece of mechanism.

We have evidence before us that a goodly proportion of motor cyclists who read of these performances but do not come in contact with the men who accomplish them, are inclined to think that the nervous strain must be considerable, at any rate in connection with the two first-named rides, and have asked us to ascertain if continuous motor bicycle riding has any deleterious effects on the nervous system.

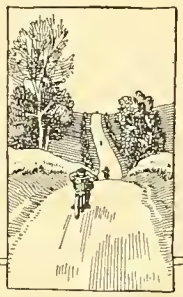
Medical opinion says it depends on the man, and doubtless this is the correct solution. Ordinary continuous riding like the coast ride referred to must be beneficial, because the rider obtains a normal amount of rest and sustenance at usual hours—a ride of this description is akin to ordinary touring with a spice of the strenuous added. No one would assert that an A.C.U. six days' trial, for instance, would affect the nervous system of a motor cyclist in good health beyond a little anxiety as to loss of marks. Therefore we have no hesitation in saying that continuous riding under ordinary conditions is beneficial, particularly if another form of recreation be combined with it. With regard to the more exacting forms of competition to be met with in the compilation of the greatest number of miles in six days or the End-to-end, they are best left alone except by the hardiest and strongest riders, and certainly should not be attempted without a strict examination by a medical man, otherwise the after effects might be disastrous.

It should be clearly understood that we are referring only to strenuous motor cycling. So far as ordinary daily riding and touring are concerned they are among the most health-giving and delightful recreations known to man. They are a tonic alike to mind and body.

THREE NOMADS IN NORMANDY.

"THE Crock," "The Terrier," and I decided on a week's tour in France, and our ideas on the subject being of a rather general and hazy nature, we deputed "The Crock" to write to the A.C.U. to obtain more exact information.

We were informed that it was necessary, or at any rate advisable, to obtain an International Pass, a plaque bearing the mystic letters "G.B.," and also a card to get our machines through the Customs (without paying duty) on landing in France. To obtain the International Pass and plaque, it is necessary to take your motor cycle to any one of the examiners appointed by the R.A.C., and having given particulars of your machine and supplied a couple of photographs of yourself, you are given, on payment of 10s. 6d., the said pass and plaque. Armed with these and your Customs card, you can start without fear of any trouble on the other side.



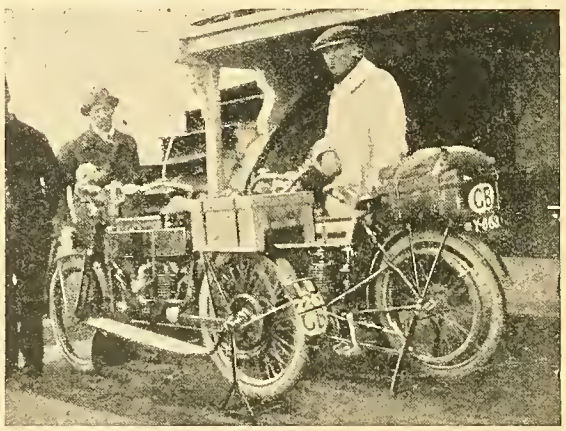
We had mapped out a rough programme and time-table, and this "The Crock" sent up to the A.C.U., who were good enough to send, through the Touring Department of the R.A.C., full particulars and distances, etc., also a little map with our route marked out, and several guide books, including the Michelin Guide to France.

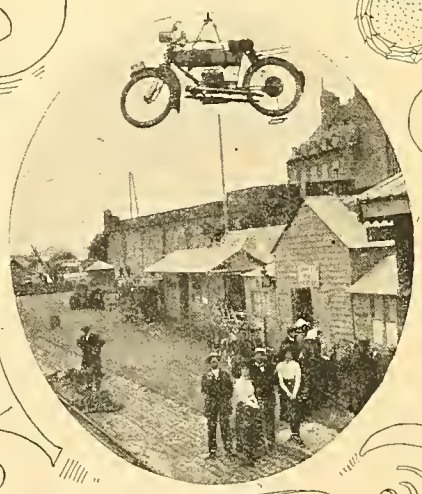
Start from Southampton to St. Malo.

Saturday, August 27th, was the day we had fixed upon for our departure, and the afternoon of that day saw us all three converging on Southampton. "The Crock" was on his 1909 Triumph, "The Terrier" on his 1908 ditto, and I on my brand new four-cylinder F.N.

On arrival at the Southampton Docks we were met by an official of the A.A., who saw our machines safely on board the boat for St. Malo, where we disembarked about ten o'clock Sunday morning, and our passes, our few French sentences, and the little humour advised by the guide book soon got us through the Customs. "The Terrier" supplied most of the French, "The Crock" the humour, while I dabbled a little in both. We filled up our tanks on the Quay, and then garaged our machines before strolling round the town and wall.

We were all for pushing on promptly, so we fetched out our machines and took them across (petrol and all) to Dinard by one of the little steam boats plying between St. Malo and that town. There is a steep ascent from Dinard's pretty little Quay up through the town, and we had a fine view across the water to St. Malo. Our idea was to get to Dinan, and if possible on to Mont St. Michel, but the weather, which had been doubtful for some time, gave up its feeble efforts to keep fine, so we decided to remain till the morrow in Dinan. Our introduction to French roads was not very encouraging, as the nineteen miles from Dinard to Dinan are as bumpy as anyone would wish to meet, or rather to avoid.





(1) "The Crock" and the writer (on the left) on board the boat for Dinard.
(2) Landing the writer's F.N. at St. Malo.

To Dinan and Mont St. Michel.

Dinan is a typically French town, with some quaint old streets and fine ramparts. Its inhabitants would seem to take a leading line in making old furniture, and my impressions of the place are a hazy memory of rain, ramparts, and old furniture, more particularly of rain.

It was not until about the middle of the next day that we were able to get away. If eloquence could subdue the elements "The Crock" would be a very useful man to have in place of an umbrella; his oratory of the fiery kind may have helped to dry the roads. Our objective was Mont St. Michel, and our way took us over the viaduct, and thence through pretty country to Dol, where the *pavé* shook us up and the sun and lunch did much to improve our general outlook on life.

The start after lunch was noteworthy on account of a free circus performance on the part of "The Terrier," who, in mounting, caught his mackintosh in the pedal of his machine, and, slipping on the wet *pavé*, sat down in the road with his Triumph in his lap. "The

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Crock" thought it a very praiseworthy and successful attempt on the part of "The Terrier" to obtain local colour. After he had recovered his balance and a few scattered portions of his belongings, we slid into our saddles and pushed on to Pontorson, and then turning off to the left were soon careering merrily along the causeway that leads to Mont St. Michel. It was low tide, and as we approached, we got a magnificent view of the famous mount rising up in solitary grandeur in its waste of sand and sea.

(1) Washing clothes at St. Lo.

On our arrival there we were greeted by a bevy of boys and men, all anxious for our custom. We put forward "The Terrier," who has more of the language, to parley with them, but at that moment a notice over a door about a famous omelette caught the keen eye of "The Crock," and under the lead of "The Terrier" we beat a masterly retreat through the doorway.

Tea on the terrace overlooking a wide expanse of sand and the dark rock of Tombelaine, with Avranches in the far distance, a visit to the museum, a walk round the ramparts, and an excellent dinner completed our day.

We were called about 6.30 next morning, as we wanted to have a good look at the Abbey, and, owing to the rain, were considerably behind our time-table.

The Abbey seems to have undergone a good deal of alteration from time to time, and we were a little disappointed with parts of it, but it occupies a position that is unique, is redolent with historical associations and reeking with romance. Eleven o'clock saw us on our way back to Pontorson, where we struck the main road for Avranches.

We took in petrol on the way, and this was served to us by three smiling little maids, who seemed greatly impressed by "The Crock's" frantic efforts to be pleasant in the French language.

The road was a good one, and there is a winding ascent to Avranches, while the *déjeuner* there was a dream. We then sauntered round the town, and among other things saw the stone where Henry II. did penance before the Papal legates for the murder of Thomas à Becket. About two o'clock we left again for Granville. It was a pretty run through picturesque pastoral lanes till we reached the summit of a fairly stiff hill. Here we had a magnificent view of Mont St. Michel and Tombelaine. "The Crock" named it aptly "The Wash of Brittany," and as none of us had seen the original, and it was really Normandy, we agreed with him. Having smoked our pipes in peace, we again put our noses to the magneto. "The Crock's" Triumph hereabouts started to jib, and he had to put in some useful work with his legs. We found that a bolt had come out of the brake, which left it perpetually on. This was remedied in Granville, and after tea in that town we headed for Coutances. It is a fine straight road all the way from Granville to Coutances, and a very interesting one. We sailed along at a pleasant pace, and as we approached had a grand view of Coutances and its cathedral on the opposite side of the valley. Down a winding road into the valley, then up again, and we were right in the town. We had no definite plans on the subject, but all liked the look of the place, so decided to stop there for the night.

(2) Stone marking the spot where Henry II. did penance for the murder of Thomas a Becket.

(3) Mont St. Michel at low tide.

(4) Avranches. Monument to heroes who fell in the Crimea.

The day's run was, I believe, about sixty miles, and well worth it.

We were up again soon after seven o'clock next morning, more fully to explore the town. First of all we visited the cathedral and the churches of St. Pierre and St. Nicholas, the exteriors of which are extremely beautiful, but of all three of them we were more impressed by the work of the interior

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of the two latter. Altogether Coutances is a dear old place, but we had other worlds to conquer, and it was striking ten o'clock as we left. Our programme for the day included St. Lo, Bayeux, Caen, and anything else we felt inclined for.

St. Lo and the French Peasants.

It is a typical French road from Coutances to St. Lo, and for miles we passed hundreds of peasants, men and women, all leading cattle. (Evidently there was a fair in St. Lo.) It was an instructive and wholesome sight to see these sturdy sons and daughters of the soil in their picturesque smocks and caps taking their kine to market. How contented and strong they look, these peasants who are the backbone of France.

All the same, this sort of thing has its disadvantages to motor cyclists.

You are just congratulating yourself on successfully negotiating a too curious cow, when you find yourself heading straight for some bellowing bull, who, with lowered head, awaits your advent. "The Crock" nearly came a cropper in this manner. It was a case of "all butt," and had he not dismounted he might have found himself on the horns of a very solid dilemma.

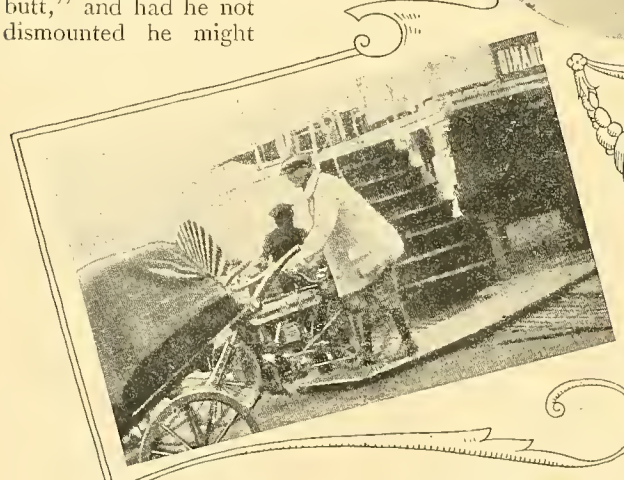
Passing 'twixt cows and cottages we soon arrived at St. Lo, stopping there only for a few moments before continuing on our way. The road ran straight as an arrow through the ancient Forest of Bayeux. It was a road to dream about. On reaching Bayeux itself we first proceeded to satisfy our inner men, and then, of course, the famous tapestries had to be seen. This took us some time, and we could give no more than a cursory glance at the cathedral, which is a very fine one, differing from those we had seen up to the present, in that it has a central dome (or spire) in addition to the two usual spires.

We took in petrol before starting for Caen, which was now our objective, and again we had a road such as delights the heart of mortal motorists. In Caen it was we saw our first fellow motor cyclist. We onl spent half an hour or so here; "The Crock" was a for pressing forward while there was yet light, as w wanted to spend our night at Dives. Passing alon by the side of the canal, we came upon a quaint hous whose owner was evidently in the pottery line. Ther were china dogs in kennels and on the lawns, chin cats on the roof of the house, and the trees were fu of china birds. Arrived at Dives, we sought out th "Hôtellerie de Guillaume le Conquérant," and thi ended our day's run of about ninety miles. Th above mentioned hostelry is a truly lovely ol inn. Its one fault is, perhaps, that it has bee made too perfect; this gives i a certain air of artificiality, but i should not be missed by anyone i the neighbourhood.

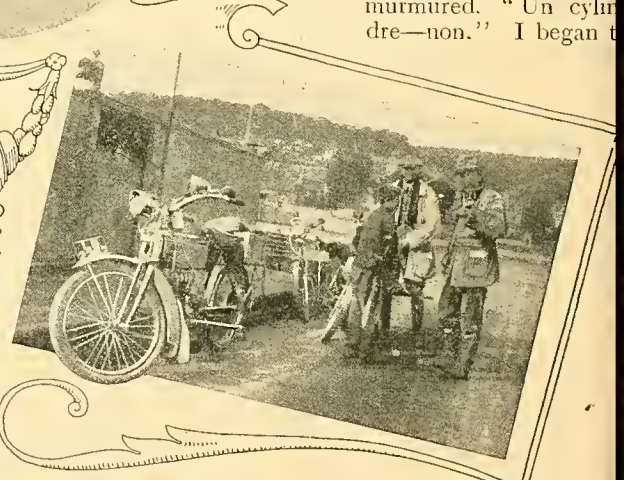
It was from near by Dives tha William the Conqueror set out wit his men to conquer England.

On going into the garage nex morning I found the garage garço gazing transfixed before my fou cylinder F.N. Nor could all th arguments of "The Terrier" or th wiles of "The Crock" persuade hi to look at their Triumphs. "Quat cylindres ver' good," h murmured. "Un cylin dre—non." I began t love that boy. Shortly after starting, in endeavourin to gyrate round the usual bull, I hit the pavement an bent my front mudguard.

The machine then started misfiring, and on a hill had to dismount ignominiously. Perspiring, but pe severing, I arrived at the summit, to be greeted wit cries from "The Crock" and "The Terrier" "Quatre cylindres ver' good." "Un cylindre— non." I told them they had no souls, and proceede to locate my trouble. It was our friend the bull th was to blame! The bent mudguard, when the whe was in certain positions, just touched the clip holdin on the magneto cap, and a "short" was the resul The road was not a good one to Trouville, and afte that fashionable watering place, through "Cornis Normandy," though very pretty, it is bumpy all th way to Honfleur.



(2) "The Crock" disembarking at Dinard.



(1) "Terrier" and "Crock" in the forest at Bayeux.

(2) The Nomads cross the Seine at Caudebec by ferry.

Three Nomads in Normandy.—

Honfleur and Perfect Forest Roads.

A quaint old fishing town is Honfleur. From the terrace outside the Hotel St. Simeon, where we lunched, we got a grand view across the estuary of the Seine to Havre. We then set off for Pont Audemer, and after a bit of uphill work descended into the valley, and then up and down again into Pont Audemer. A fine road with some grand views into the valley of the Risle. On leaving Pont Audemer, a town of tanneries and quaint gabled houses, we had a little excitement in getting past a string of half a dozen or so restive horses (tied head of one to tail of the next). The business end of the string waved about from one side of the road to the other in a way most disconcerting; however, we successfully negotiated this, and climbing something of a hill, were soon in the Forest of Brotonne. Emerging on to heather-clad moors we reached the banks of the Seine and took our machines over by the paddle ferry to Caudebec, nestling between wooded hills on the other side. Tea at the Marine Hotel, almost on the banks of the river, a visit to the church (one of the best), a ramble round this beautiful little town, and we were off again for Rouen. Following more or less the course of the Seine, glimpses of which we caught here and there, we entered the Forest of Roumare. A long winding ascent through avenues of pines, a straight stretch, and then a little later on a curving descent, a mile or two of trams and *pavé*, and we were in the heart of Rouen. What a wonderfully varied run we had that day, and oh! those glorious roads through the French forests, with the dark pines on either side and only the throb and purr of our engines and the occasional shriek from the siren of some car as it sped past to break the sylvan silence.

"The Crock" was early at work next morning fitting a new inner tube to his back wheel, as his old one showed signs of a leakage. This successfully accomplished, we found a nail for him in his front tyre. He can be quite eloquent can "The Crock," but we soothed him and helped to push his machine to a garage while we proceeded to explore Rouen.

(1) "The Terrier" and the writer in front of the Hotel du Cygne.

(2) A breakdown after leaving Totes. "The Terrier" has to replace a valve.

The cathedral, with the tomb of Richard Cœur de Lion, the Church of St. Owen, the statue of Jean d'Arc, and the Hotel Bourgherie, were among a few items we ticked off our list.

Some very beautiful, all are very interesting, and any guide book on the subject will tell you all about them. I am writing for the motor cyclist, and to the motor cyclist *pur et simple*, I would say, "Rouen with its tramlines and its *pavé* is not Paradise." We had about ten miles of both out of the city. (There is a back road to Maromme which avoids most of the *pavé*. —Ed.) After a winding hill there was not much of note till we reached Tôtes, but there we lunched at an interesting old inn, the Hotel du Cygne. A gentleman (an architect) would appear to run the hotel as a hobby; it is full of pictures and *objets d'art*. Altogether we had a very enjoyable hour or so in Tôtes. We were advised by our host to leave the main road for Dieppe and "trek" thither along the valley, *viâ* Auffay and Longueville, so we turned off the main road to our right, and shortly after this "The Terrier" broke an exhaust valve. It was wonderfully pleasant, that peaceful pipe that "The Crock" and I enjoyed while we watched "The Terrier" at work. However, we were soon on our way again, and following pretty orchard-lined country lanes we got back into the main road just before reaching Dieppe, our journey's terminus. Our tour in France was ended.

Features that Impress the Motor Cyclist.

For one thing, the straightness of the national roads of this part of France, and absence of any really stiff gradients. At any rate, in our short tour we met no hill that the powerful modern motor cycle with full touring kit could not climb with ease, and a two-speed gear is quite unnecessary. Even where there is a considerable rise the road is so well engineered that a gradient of, say, 1 in 10 seems quite the exception.

The absence of the motor cycle, too, at once strikes you; we saw not a single machine till our tour was nearly over. I have heard its absence explained by the *pavé*, and truly this is very terrible in the towns.

Even cars do not appear to be anything like so

Three Nomads in Normandy.—

numerous as in England. We noticed, too, that they almost all carry a siren instead of our more frequent horn, and would seem for the most part to eschew silencers

Petrol is put up in neat little cans of five litres (just over one gallon), but the cost works out a few pence more per gallon than we pay at home.

It may have been partly due to the roads, but our machines certainly ran beautifully on the French spirit, and my F.N. did ten to fifteen miles more per gallon than the best home brands will take it.

We had no trouble of any kind with officialdom, and found everyone most obliging. Only once—at a garage in Dieppe—had we cause to complain of the charges.

The hotels and inns we found very comfortable, and they do you extremely well in the matter of meals. Breakfast off rolls and coffee may be somewhat of a thorn in the flesh to the uninitiated Englishman, but it undoubtedly chasteneth his spirit.

The Things that Count.

Certainly we took things easily, but perhaps when looking back on a tour such as ours, moving as we did from place to place and condensing so much into so short a time, one is a little apt to forget details. Things and places lose to some extent their individuality. The memory of one town is swallowed up by the next. Churches seem all alike; one road seems but a repetition of another, till one's impressions get blended together into a kindly and homogeneous whole.

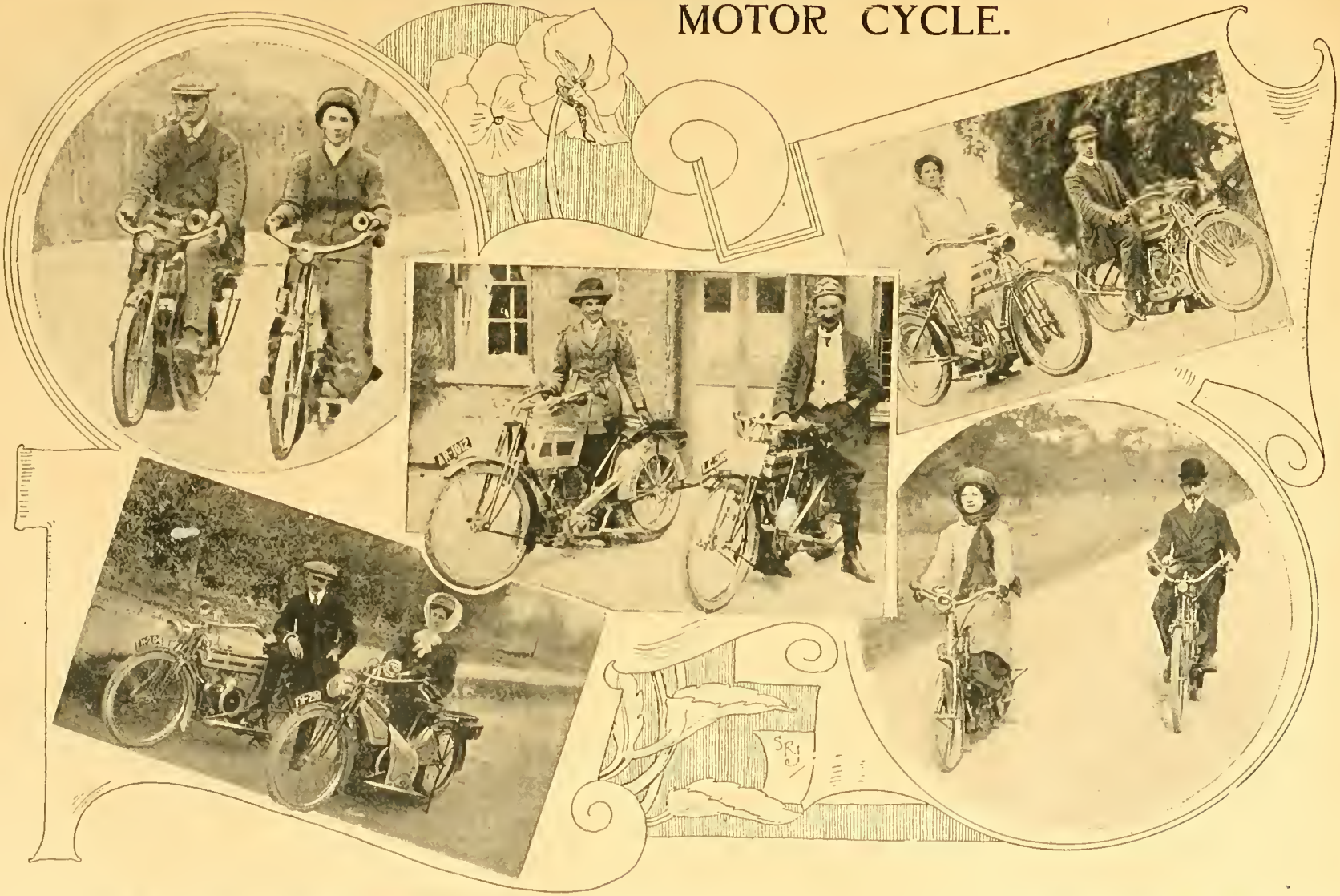
But the atmosphere always remains, and against the somewhat blurred background of these mists of memory there stand out clearly the things that matter most: the peasant life of France, the country's history, its associations, its romance, certain beauty spots of nature, certain handiworks of men, and then the hundred little incidents that leave an indelible impression upon one's memory. All these are the things that count afterwards.

So charge your glasses, fellow motorists, and drink with us to Normandy and Brittany, twin sisters, whose history has been our history, and whose dukes have been our kings, and let us take off our hats to the "Man of Destiny," who made the roads to run like ribbons through the land, so that France has become the Mecca of the motorist.

Oh! you proud peasants of Normandy, with your strong brown faces, may you prosper and your cows give good milk. And to you! bonny Breton maids in your dainty caps and gowns, I drink "*à vos beaux yeux*"; and "The Terrier" and "The Crock" and I refill our glasses and cry anew "*Au revoir*" to the country and the people, for we shall assuredly visit you again.

A CONTRAST. Pleasure without pain.

MARRIED COUPLES WHO MOTOR CYCLE.



Mr. and Mrs. Walford of Handsworth, Birmingham. (Triumph and Hobart machines.)

Mr. and Mrs. W. B. Gibb of Gloucester. (Two-speed Douglas machines.)

Mr. and Mrs. C. C. Cooke of North Mimms, Hatfield. (3½ h.p. Triumphs.)

Mr. and Mrs. E. F. Baxter of Liverpool. (3½ h.p. and 7 h.p. Rex machines.)

Mr. and Mrs. de Lissa of Kew Gardens, Surrey. (Motosacoche lightweights.)

Occasional Comments by "Ixion"

Alternative Magneto Timings.

I suggested on June 15th the usefulness of provision for a quick change of the magneto timing for sprint, touring, and climbing work. A reader sends details of a cute arrangement for the old pattern magneto fitted with a fibre ring cam. These cams slide into a brass ring, and their position is determined by a brass dowel on the inner periphery of the brass ring and a nick to match in the outer edge of the fibre cam. My correspondent files two extra notches in the fibre, one for faster and one for slower timing, and when he wishes to alter his timing he simply pulls out the fibre ring and engages the dowel with a fresh nick as desired.

The "Lightweight" T.T.

I am not alone in hoping that some prominence will be given by the A.C.U. to the actual weights of the machines which compete in the Junior T.T. As far as I can judge, some of the machines may actually scale a few pounds more than the lighter machines in the Senior T.T. Of course the heavier these machines are the more creditable will their performances be; nor do I wish to blame the A.C.U. for refusing to impose a weight limit.

The first necessity is to develop the small engine. When the makers have discovered how to extract the maximum efficiency from a 300 c.c. or 340 c.c. engine it will be time enough to refine a lightweight "chassis" in which to mount the engine, and the majority of makers may be trusted to do so.

But we must remember the crass ignorance of the general public, who have a notion that the Junior T.T. will be contested by genuine lightweight machines, and must in some instances fancy that the junior racers will weigh between 80 and 100 lbs. Nor must we forget that some of the machines will be genuine medium weights of settled design, scaling about 115 lbs. in racing form or 120 lbs. in touring trim, whereas others will weigh as much as the crack 3½ h.p. tourist types.

Those makers who have already evolved a genuine medium weight deserve the credit of their achievement, and ought not to be put in the shade by the somewhat meretricious performances of competitors on heavier machines. Here is the point in a nutshell: The lightweight enthusiast is not a man who is clamouring for a smaller engine, he is a man who is demanding a lighter machine.

The Use of Two Adjustable Fasteners.

I continue to see many riders who ought to know better stopping by the roadside, both on tour and in trials, busy with knife and punch shortening their belts. Such habits were not reprehensible a year or two back, but to-day they are unpardonable.

The name of adjustable fasteners is legion, and an up-to-date rider ought never to require knife and punch on the road except when a fastener snaps or an ill-made joint "pulls through." As soon as I receive a new machine I scrap the non-adjustable fastener with which its belt is fitted, and I substitute a couple of adjustable fasteners, inserting them at some distance from each other, and adjusting the belt so that the longest link supplied is in use. As each fastener is provided with two shorter hooks, I have four adjustments of the belt in reserve without using knife or punch, and if the belt stretches on the road, it is only the work of a second to remove the long hook in use, and fit a shorter hook carried in the vest pocket.

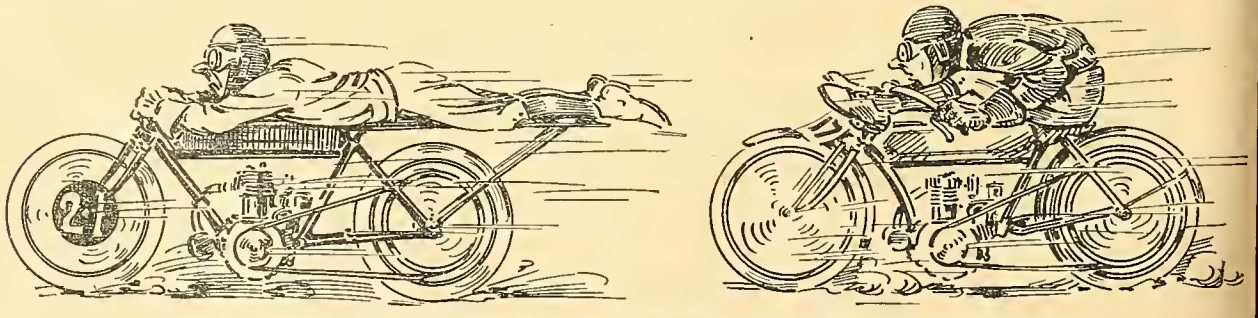
Crude Adjustable Pulleys.

It remains a matter of astonishment that so many firms—and those among the foremost in the industry—continue to retain the pattern of adjustable pulley which requires a couple of spanners to vary the gear.

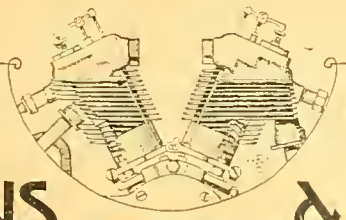
Whenever one wishes to alter the gear the toolbag must be unpacked, and if the threads on locking nut, ring, or boss are a trifle on the tight side, or a speck of dirt has found access to them, much clumping with a big wrench or hammer may be required to unfasten the locking arrangement and screw the flange in or out.

Three years ago I started using a toolless finger-operated pulley, and that pulley is still in use; consequently I resent a relapse into inferior methods. It is true that some of the hand-operated pulleys develop wear rather rapidly, but the cost of replacing some small item is amply repaid by the economy of time and temper procured by a patent adjustment.

I sincerely hope that at the next Olympia the spanner-operated type of adjustable pulley will be replaced in all instances by a hand-operated type.



Our humorous artist's suggested riding positions for T.T. competitors, said to reduce wind resistance to a minimum.



QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All queries should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and whether intended for publication or not **must be accompanied by a stamped addressed envelope for reply.** Correspondents are urged to write clearly, and on one side of the paper only, numbering each query separately for ease of reference. Letters containing legal queries should be marked "Legal" in the left-hand corner of envelope, and should be kept distinct from questions bearing on technical subjects.

Advancing the Spark.

[?] My old 1¾ h.p. Minerva, after being laid up for the winter, gives me a good deal of trouble to get started when the engine is cold, and I have read a good many answers to the same purpose, but cannot quite understand some of the explanations. One of the answers in *The Motor Cycle* a few weeks ago was partially to exclude air from the carburetter, flood the same, inject a little paraffin, and advance the spark; this is the most likely one to suit my case, but will you please state where to drop the paraffin? I have tried the throttle, but without results. You might also explain what advancing the spark means, and how it is done? I am reading weekly in *The Motor Cycle* about advancing and retarding the spark, but I am yet at sea in this respect.—J.K.

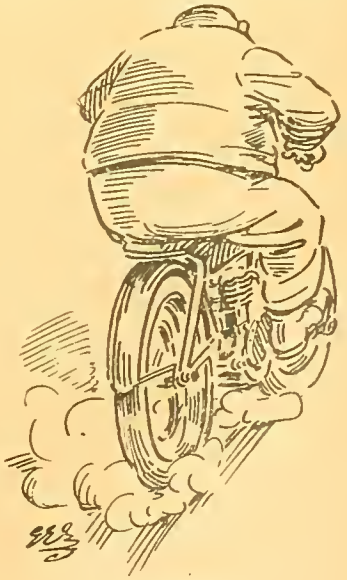
With regard to the injection of petrol. This is inserted for the purpose of freeing the piston rings, which become clogged with oil. A few drops are squirted from an oilcan into the compression tap—that is, the tap on the top of the cylinder. In your particular machine you must not advance the spark very far, as the ignition is by accumulator. It should be not quite halfway. The advance spark lever is the lever connected to the contact breaker. Advancing the spark means timing the ignition to take place early or late in the stroke. Full advance would mean that the spark took place a little before the piston reached the top of the compression stroke, so that the full force of the explosion is utilised. A retarded spark means that the spark takes place late in the stroke, that is, when the piston has already begun to descend on the firing stroke. See "Motor Cycles and How to Manage Them."

Making a mascot for the T.T.

Charging an Accumulator.

[?] I have been so badly used by the accumulator charging people that I have decided to charge my own. I have a ¼ h.p. motor in the works, and have procured a small dynamo to run from it. I find I can get any volts from it according to the speed it is run, but the ampèrage seems very small. Can you inform me whether the ampèrage drops with the voltage on a dynamo? To illustrate, suppose a dynamo running at 3,000 revolutions a minute gives 20 volts and 1 ampère, and running at 1,500 it gives 10 volts, does it give ½ ampère or still the 1 ampère? The voltage having been halved, does the ampèrage do the same? Does it matter how many volts an accumulator has when being charged? When connecting my dynamo up in series I get 12 volts, when in parallel 6 volts, running at the same speed, and a friend of mine tells me that this does not affect the ampères. They remain the same so long as the speed does not alter. Is this so? I will just mention for your guidance that the dynamo I have was bought as a motor, and is registered to take 100 volts and .25 ampère, and to give 3,000 revolutions at this. I have tried getting a light with a 4-volt lamp when running the dynamo, and the voltage does not seem to affect the light. It is an Osram lamp, and I have passed 5, 10, 15, and 20 volts through it, but the light it gives is not quite so good as when I connect it to two of the terminals of the accumulator, which gives 2 volts (one cell). Is this because the ampèrage is low? (It is an ordinary 4-volt c.p. lamp.) As long as the ampèrage is not too high, need I trouble about the volts, provided they are higher than that shown by the accumulator?—A.H.

In the first place, your dynamo appears too small for charging a 4-volt accumulator. You should, at least, be able to get 2 to 3 ampères in order satisfactorily to charge an accumulator. Provided that the resistance is the same, the voltage and the ampères will drop proportionately. No matter at what voltage you try and charge your accumulator, if you do not have the amount of current behind it your rate of charging will be extremely slow. Neither can you get a satisfactory light on your 4-volt lamp if you do not have the supply, or if you cannot obtain sufficient amperage from your dynamo. The proper charging rate for a 20 ampère motor cycle accumulator is one-tenth of the capacity, say 2 ampères: the voltage does not matter as long as it is above that of the accumulator to be charged. If you are connected to the town electric light main, you could not do better than use it for charging purposes, provided it is a continuous or direct current. You can easily rig up a small charging board by putting a number of lamps in series; this number will vary inversely to the voltage of the main. If you have had no experience in this matter, however, it would be better policy for you to get assistance, as without some experience you might spoil your accumulator by charging too rapidly.



Heavily handicapped

Troublesome Big End Bushes.

I am experiencing some trouble with my 6 h.p. twin Phänomen. The trouble is chiefly with the connecting rod bushes (big end), which I have had to get renewed on two occasions. If the engine is run for a short time with the present bushes, the crank case gets too hot to touch. Do you attribute the above to inefficient lubrication, or to any defect in construction of engine, or to any carelessness on my part?—E.D.D.

We should say that the trouble is due either to want of lubrication or to the fact that the bushes are too small, or possibly the bushes were too tight a fit in the first place. Leaky piston rings account for heated crank cases.

Exhaust Whistle or Horn?

As I have found the ordinary motor cycle horn inefficient to reach the ears of people driving in carts, I have been considering having an exhaust whistle fitted to my machine, and would be grateful for your opinion. Is it more penetrating than a horn? Does it interfere in any way with the engine?—THOS. P. MCCANN.

The drawback to an exhaust-blown method of warning is that at the time one wants to use it most it is at a disadvantage. For example, you turn the corner of a road and find a cart blocking the way. You are then slowed down to about six miles an hour, and the explosions are so feeble that the whistle is hardly heard; in about two seconds time you have to dismount simply because you are unable to give any warning at all, whereas with horn or mouth whistle you can usually call the attention of the driver of the cart. In full swing, of course, a whistle is more penetrating than the ordinary horn. The whistle exerts a certain amount of back pressure on the engine, and when you are travelling fast, if the whistle is applied, you feel the machine perceptibly slow down, but no harm is done.

Gear Adjustment.

I have a second-hand 4 h.p. Orient engine (air-cooled), and epicyclic gear fitted on the engine-shaft. The gear ratios are 5 to 1 and 12½ to 1. The engine runs well on the top gear, but gets nearly red-hot on the low, and, of course, is terribly slow. Would it be possible to have the low gear altered to about 8 to 1, which I think would be low enough? It is fitted with a cone and leather clutch, which drives the top gear direct. The carburetter also wastes a lot of petrol, and is always wet, and does not give more than twenty miles to the gallon.—E.A.S.

You cannot raise the low without also raising the high gear, and we fear that the trouble will, in consequence, be difficult to cure. The fact that the carburetter wastes a lot of petrol seems to indicate that too rich a mixture is being given off, and this accounts for the overheating. You might try using a slightly smaller jet; also, if the inlet valves are automatic, reduce the opening.

A Capricious Starter.

I have a 3½ h.p. magneto motor cycle which has until just lately given every satisfaction. It now runs very well for about 100 yards and then stops, and when I get off I can start it again with no trouble for about another 100 yards. I have thoroughly cleaned the carburetter, and the magneto is sparking all right.—W.G.

If the carburetter is clean there may possibly be an obstruction in the petrol tank or petrol pipe. Everything points to this being the cause. Foreign matter in the tank will settle just on the pipe orifice and stop the machine. As soon as the suction on the jet ceases the obstruction is washed away, and this may well account for the erratic running.

READER'S REPLY.

Engine Knocking.

Re "P.M.P.'s" letter about engine knocking on a 3½ h.p. Humber, I have had similar trouble on my 1911 3½ h.p. Humber and sidecar. The engine used to knock on the slightest provocation, and would take very little extra air. At last I discovered that I was riding with the spark lever too far advanced. With the spark lever half retarded, the engine takes much more extra air and does not knock and runs much more smoothly. On the other hand, my little 1¼ h.p. Moto Velo—on account of its very low gear, never knocks, even if one rides slowly with the spark fully advanced.—A. ARGENTI.

EXPERIENCES WANTED.

"H.G." (Leeds). 1911 3¾ h.p. Scott and sidecar as to reliability, etc.

"A.B." (Lincs.) T.A.C. machines as to ease of steering when riding solus, and reliability.

(2) A motor cyclist's camp.

(1) In leafy seclusion. A likely spot for a camp.

(3) A camping outfit and utensils mounted on an Enfield.

Camping de Luxe

By F. Horsfield

THE large number of readers of *The Motor Cycle* who took advantage of my offer of information on the subject of motor cycle camping contained in my article in the issue of the 4th May is ample proof of the general interest in the pastime.

I find that the cost of the camp kit is the prospective motor cycle camper's first consideration, and, below, I give the cost and weight of the essential items:

	£	s.	d.	lbs.	ozs.
"A" tent, in lawn	0	19	6	2	9
Poles and case	0	8	3	2	5
Paint proofed ground sheet	0	8	3	1	6
Cashmere ground blanket	0	7	0	0	13
Aluminium pegs	0	3	9	0	11
Eiderdown quilt, 6ft. × 4ft.	0	18	6	2	1
Lawn pillows stuffed with down	0	2	0	0	2
COOKING OUTFIT.					
Primus stove	0	8	11	1	6
Canteen, consisting of three saucepans and one fry-pan with detachable handle ...	0	10	6	1	0
Condiment box, three compartments ...	0	1	6	0	1
Sheath knife, in leather case	0	2	6	0	3½
Aluminium dessert fork and spoon ...	0	0	6	0	1
,, teaspoon	0	0	2	0	0¼
Eggcups	0	0	8	0	0¾
Milk can, 1½ pint	0	3	0	0	5½
Tea infuser, egg shape	0	0	9	0	0¾
TOILET REQUISITES.					
Mirror, aluminium frame	0	2	0	0	2½
Tooth brush case, to protect bristles ...	0	1	0	0	1
Shaving soap case	0	1	6	0	1
Comb	0	0	8	0	1
Canvas wash basin	0	1	3	0	3½
,, bucket, 3 gallons	0	2	0	0	9
MISCELLANEOUS.					
Enamelled butter bowl	0	0	10	0	3½
,, plate	0	0	4	0	4
,, mug (large)	0	0	5	0	4
Pannier bags, for use on back carrier, in brown canvas, 12in. × 8½in. × 3½in.	0	11	6	2	0
	£5	17	3	16	14¼

Packing the Kit on Machine.

The motor bicycle does not lend itself quite so readily to the carrying of luggage as the humble pedal cycle, since the back carrier only is available; the photograph on opposite page of my Royal Enfield shows how the most can be made of this limitation, also within how small a compass the impedimenta can be brought.

The free engine, with which this machine is fitted, prevents the risk of fouling the panniers which is more or less contingent on a running pedal mount on a machine without this device.

Camping Solus.

One of my correspondents asks if the whole kit can be carried on a Douglas, and, while the joys of camping are best appreciated in company, I have, on many occasions, proved the capabilities of this machine to carry a full camp kit in addition to its rider, my weight being 11 stones and the kit from 30 to 35 lbs.

There is, I am aware, sometimes a difficulty in inducing one's friends to take to the open-air life, and the best advice I can give—and have given to my correspondent—is to join the Amateur Camping Club, which now boasts over 1,000 members, a fair proportion of whom are motor cyclists, when he will be brought into touch with others of kindred tastes and, if his experience is that of others, he will find that campers will go to any amount of trouble when it is a question of initiating likely participants of their favourite pastime. I know of several cases in which ladies have cut out and made tents for their male acquaintances from sheer enthusiasm. This was, admittedly, in the early days of cycle-camping and before such facilities for the purchase of camping kit, as at present, were available.

Garaging of Motor Cycles on Tour.

This, also, is a point raised by more than one of my correspondents. As farms generally provide the site for the temporary camp, chosen owing to the necessary eggs, milk, and butter being procurable, provision for the motor cycles and sidecars will be found in the outbuildings.

The charge made by farmers in contract with the club above referred to is 6d. per tent per night, while no payment is asked for the garaging of the machines. When this is contrasted with the item on some hotel bills of "1s. for motor cycle in yard," it will at once be seen that the cost of camp kit is soon recovered.

Fixed Camping.

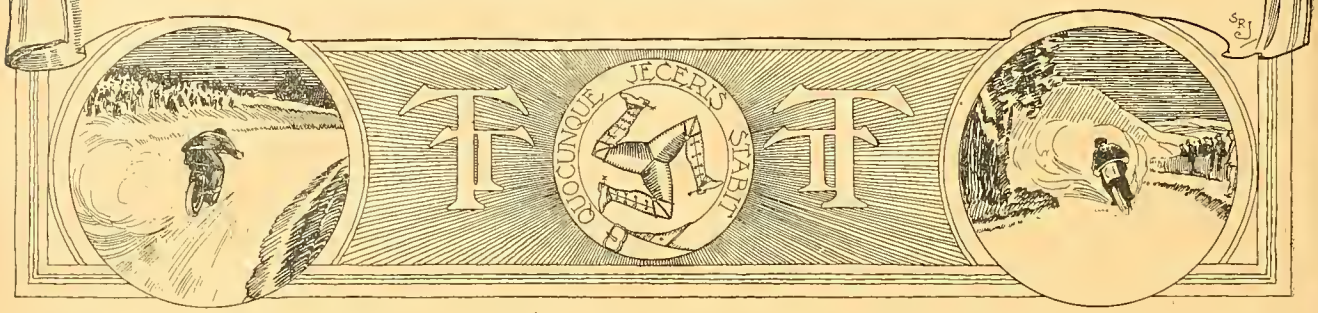
I am writing this article in camp, having made arrangements for a fixed camp for the whole of the summer months; the only buildings in sight are those attached to the farm, whilst ten minutes' ride covers the distance between tent and home.

Here, with other friends, we are camping *en famille*, and, as will be seen in the accompanying photograph, we enjoy all the comforts of home with the additional benefits of the open air life. Our tent door is never closed at night, but, with straw mattress spread on top of rubber ground sheet, and covering of eiderdown quilt, we sleep as warmly as at home.

The independence enjoyed by the motor cycle camper is one of the greatest advantages of the pastime, as there is no need to leave a beautiful site to return to town for meals and sleeping accommodation. This is never more appreciated than in the early morning, when the sun is shining on the tree tops, and the walk across the meadow to the farm for the morning's milk and eggs whilst one's companion is getting the stove going adds zest to the appetite.

The Motor Cycle Tourist Trophy Races.

A BRIEF HISTORY. NEWS IN GENERAL. PRACTISING ON THE COURSE.
SPECIAL POINTS OF THE COMPETING MACHINES.



OVER five years ago the motor cycle industry was not what it is to-day, as it was just recovering from the bad times of the previous two years. Road racing was all but dead, and there was every prospect of the International Cup Race of 1906 being a fiasco. There were those, however, who did not look upon things in such a gloomy light. At the annual dinner of the Auto Cycle Club, as the A.C.U. was then called, Mr. H. Walter Staner, the Editor of *The Autocar*, the parent journal of *The Motor Cycle*, said he hoped "that some competition could be arranged on the lines of the Tourist Trophy for motor cycles." Little notice was taken of the remark at the time, but it bore good fruit, and immediately after the International Cup Race, the last of its kind, Mr. H. Collier, sen., suggested to that most excellent of sportsmen the Marquis de Mouzilly St. Mars while in the train on the way back to England from Austria that a motor cycle competition on Tourist Trophy lines should be run. The Marquis was greatly struck by the idea, and in our issue of December 12th, 1906, it was definitely announced that such a contest would be held.

At this early period the A.C.C. had no basis on which to work, so to follow as closely as possible the regulations governing the car race it was decided to employ a petrol consumption limit as a means of curtailing the speed. This idea of restricting the speed was to render the race as safe as possible without detracting in any way from the sporting side of the competition, and it was decided to presume that an average speed of 30 m.p.h. would be maintained, and to allow a requisite amount of fuel for this purpose.

After much discussion, over which the writer spent many late hours, the allowance for single-cylinder machines was fixed at one gallon for ninety miles, but unfortunately the donor had apparently forgotten the existence of the multi-cylinder machines, and for these it was eventually decided to offer a special prize, while their fuel allowance was arranged to be at the rate of one gallon for every seventy-five miles. The triangular course in the Isle of Man, from St. John's to Ballacraine and on to Kirk Michael and Peel, was chosen, the same course which has been utilised for the past three years. Each man had the requisite amount of fuel allotted to him (plus one pint to allow for leakage or wastage) placed in a can which he could seal if he liked. He took in as much as he could carry at the start, and at half-time he was allowed a stop of ten minutes in which to take in the rest. The course, which was fifteen-and a half miles in extent, was covered ten times. The only foreign competitor was Geiger, on a 3 h.p. N.S.U., who, of course, represented Germany. The results were:

Rider and machine	h.	m.	s.	m.p.h.	gls.	pts.	ozs.	m.p.g.
1. C. R. Collier (3½ Matchless)	4	8	8⅕	38.5	1	5	10	94½
2. J. Marshall (3½ Triumph)	4	19	47⅖	36.5	1	3	2½	114
3. F. Hulbert (3½ Triumph)	4	27	49⅗	35.5	1	6	0½	90
4. R. M. Brice (3½ Brown)	5	3	56⅕	31.4	1	1	15	129
5. M. Geiger (3 N.S.U.) ...	5	10	26	30.6	1	5	3	96

Brice's petrol consumption is worthy of note, while Geiger won the St. Mars prize for the best performance of a foreign rider. Multi-cylinder results:

1. H. R. Fowler (5 Norton)	4	21	52⅘	36.2	1	6	13	87
2. W. H. Wells (5 Vindec)	4	53	44⅘	32.3	2	0	7	77
3. H. Heaton (5 Rex) ...	5	11	3⅘	30.5	1	3	17	107

This, the first Tourist Trophy Race, was run on May 30th, 1907.

In the following year, since the competitors had done so well on their petrol allowance, it was decided to curtail this to even a greater extent, and so single-cylinder machines were allowed fuel to the extent of one hundred miles to the gallon, and multi-cylinder machines to the extent of eighty miles to the gallon. It must be borne in mind that what is commonly known as a "freak" was entirely barred, and the competing machines were made to conform as closely as possible to touring conditions. But while pedals were allowed in 1907, they are excluded the following year.

September 22nd, 1908.

Rider and machine.	h.	m.	s.	m.p.h.	Petrol left in tank. ozs.
1. J. Marshall (3½ Triumph)	3	54	50	40⅖	38
2. C. R. Collier (3½ Matchless) ...	3	57	0	40	22
3. Capt. Sir R. K. Arbuthnot, Bt., R.N. (3½ Triumph)	4	7	57	38⅕	18

The Motor Cycle Tourist Trophy Races.—

MULTI-CYLINDER CLASS.

	Rider and machine.	h.	m.	s.	m.p.h.	Surplus petrol oz.
1.	H. Reed (5 Dot-Peugeot)	4	5	58	38½	2½
2.	W. H. Bashall (6-7 Bat-Jap) ...	4	8	15	38	21
*3.	R. O. Clark (5 F.N., 4-cyl.) ...	4	11	2	37⅜	58

* Lowest consumption in the whole competition.

Marshall's win was quite as popular a one as that of Collier the year before, while quite a feature of the second T.T. race was the arrival of Sir Robert Arbuthnot, that most popular of amateur riders, in the third place. As regards the international side of the competition, Clark (riding a F.N.) represented Belgium, and Bell, Geiger, and Lang (N.S.U.'s) Germany.

For the third Tourist Trophy Race the limit of speed by petrol consumption was abandoned. It was felt that it compelled manufacturers either to produce a special engine or run a standard engine under its fuel efficiency, while, furthermore, it necessitated two classes, only one of which could compete for the trophy. In consequence an effort was made to "level up" the chances of the single and multi-cylinder machines, and a cubical capacity limit was installed.

The limit for single-cylinder machines was 500 c.c. and for multi-cylinder machines 750. The machine had to conform to the definition of a touring machine, and had to be "without pedalling gear, fitted with two brakes, tool bag weighing (with contents) not less than 5 lbs., motor cycle tyres (not less than 2in.), metal mudguards (not less than 2¾in.), touring motor cycle saddle, and tank to hold not less than one and a quarter gallons of petrol.

It will be seen that under the new conditions the results were completely altered, and that the singles and multis were not levelled up, as the latter class was represented in the first two. Result:

September 23rd, 1909.

	Rider and machine.	h.	m.	s.	m.p.h.
1.	H. A. Collier (5 Matchless)	3	13	37⅘	49.04
2.	G. Lee Evans (5 Indian)	3	17	35⅕	48
3.	W. F. Newsome (3½ Triumph) ...	3	31	10	44.92

The increase of speed is noteworthy. Though twin-cylinder machines held the first and second places, Marshall put up an excellent fight, and was even second in the seventh lap, passing Lee Evans, who during the early part of the race appeared as if he would be a certain winner.

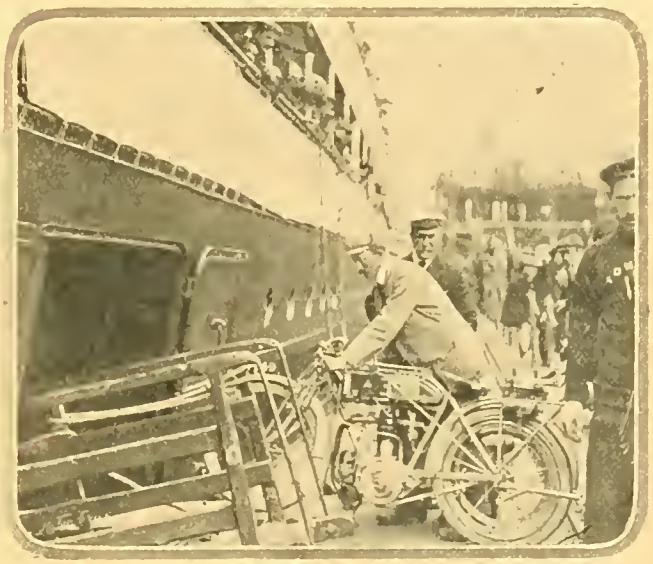
For last year the single-cylinder dimensions still remained at 500 c.c., but an effort was made still further to handicap the multis in an endeavour to level them down to the singles, and 670 c.c. was the limit adopted. As regards the regulations, the competitors were not unduly hampered. Silencers had to be fitted during practice but not during the actual race. Machines had to conform more or less to touring conditions, no pedalling gear was fitted, but each motor bicycle had to have two brakes, a tool bag weighing with contents not less than 4 lbs., motor cycle tyres not less than 2¼in., metal mudguards not less than 3½in. across, and a tank of a capacity of not less than 1¼ gallons. The levelling up effort proved again to be unsuccessful, as will be seen by the results given below:

May 26th, 1910.

	Rider and machine	h.	m.	s.	m.p.h.
1	C. R. Collier (5 Matchless, 2-cyl.) ...	3	7	24	50.627
2.	H. A. Collier (5 Matchless; 2-cyl.) ...	3	12	45	49.221
3.	W. Creyton (3½ Triumph, 1-cyl.) ...	3	17	58	47.925

It was pleasing to note that both Colliers finished first and second. They deserved success, as in the dark ages when international competitions were first started they were the first to come forward and fight for the old country and the only representatives of England to make any showing at all. Creyton made a gallant fight, but the twins were too much for him. In this race, Lee Evans (5 h.p. Indian) represented America and A. Oberländer (5 h.p. N.S.U.) rode for Germany.

We are now looking forward to the 1911 T.T. Race, which is on the eve of being contested. Several notable alterations have been made in the conditions, and much wordy warfare has been waged before these reached any degree of finality. The "levelling up" difficulty has been obviated by the Marquis de St. Mars giving a replica of the original trophy to the winner of the twin-cylinder class, and while the cubical capacity for the singles remains at 500 the capacity limit for the multi-cylinders is 585 c.c. The other conditions remain practically the same. There was considerable opposition to the inclusion of a multi-cylinder class of this size, but it was eventually agreed to. Quite an innovation is the inclusion of a Junior T.T. Race; limit for single-cylinders 300 c.c., and for multi-cylinders 340 c.c., pedals barred, machines to conform to touring conditions, and to have two brakes, motor cycle tyres not less than 2in., metal mudguards not less than 3in. across the chord, and tanks to carry not less than 1 gallon of petrol. The same course as that used in the T.T. and Four-inch Car Races has, after much discussion, been adopted, the "senior" machines cover it five times—187½ miles—and the "junior" competitors four times. The length of each circuit is 37 miles 4 furlongs. It is difficult and necessitates the climbing of the mountain road on each occasion, and will be one of the most severe courses ever used for a motor cycle road race. Most of the competitors in last year's race opposed the use of this course, but the A.C.U. adhered to its original decision, thinking that the new course would be a splendid test for the machines. The foreign countries represented in the race will be France, Germany, and America.



Hugh Gibson embarking on the "Viking" at Liverpool last week with his Junior T.T. Now Hudson. These machines have 2½ h.p. overhead valve J.A.P. engines.

The Motor Cycle Tourist Trophy Races.—

This morning (Thursday) every Junior T.T. rider must be at the Woodlands, Douglas, at ten o'clock for the purpose of having his machine examined and sealed.

Students in engine construction will closely follow the performances of the various types of Senior T.T. engines. Practically all the J.A.P. engines have bigger bores than the stroke measurement, and there is a new short stroke Precision single-cylinder engine out for the first time, measuring 90 × 77.5 mm. Then there are the opposite extremes, the Nortons having a bore of 79 and a stroke of 100 mm., and the Blumfield twins 67 × 83 mm. The 70 × 76 mm. Indian engines have also been specially designed for the race, and the trio of two-stroke Scotts add a further touch of variety

Each competitor has to wear ear-rolls during practice and the races in order to facilitate his hearing when being overtaken by another.

Metal-studded boots are not permissible owing to the risk of puncturing other competitors' tyres.

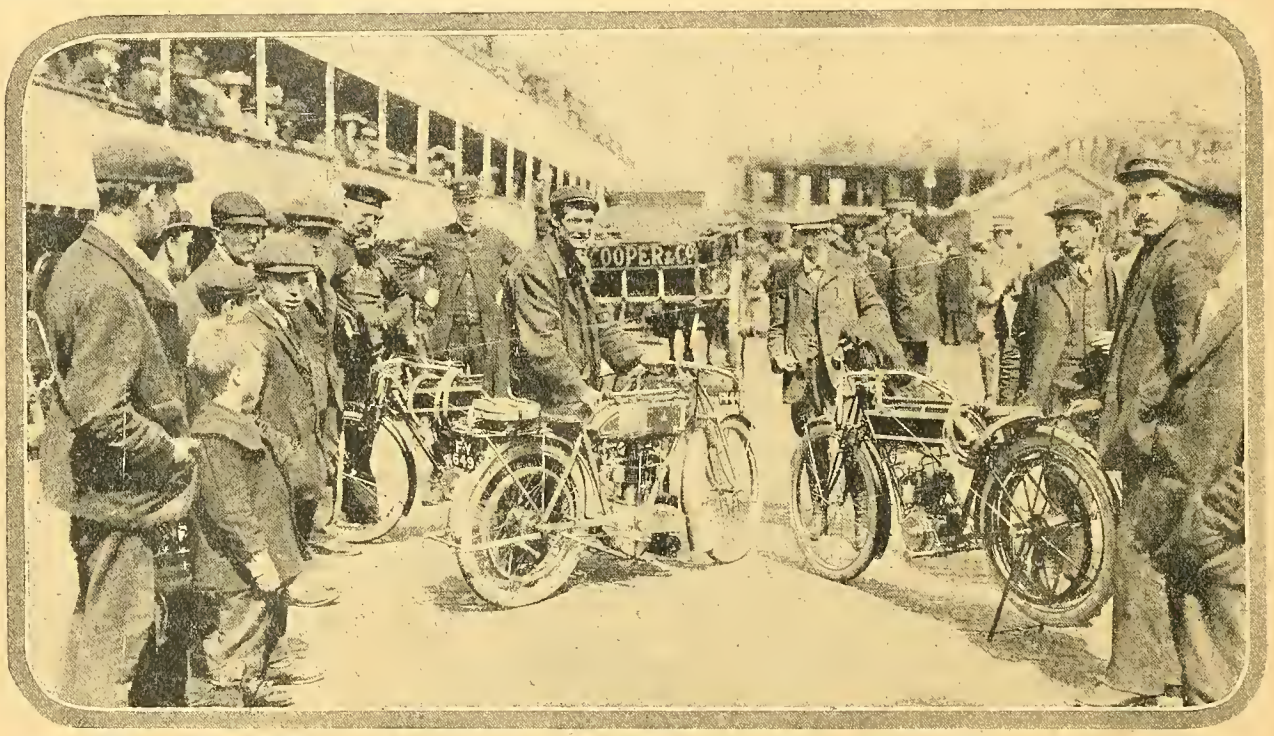
The banners on the course are to denote the approach to dangerous corners and bad stretches of road.

Entries for the Junior Race are divided as under: Humber, 6; N.S.U., 5; New Hudson, 3; Alcyon, 3; Douglas, 3; Enfield, 2; M.R., 2; Martin, 2; Zenith-Gradua, 2; A.J.S., 2; Matchless, 2; and the following one representative: Rex, Forward, N.L.G., Singer, and Bat-Jap.

A meeting of competitors and officials will be held at the Hotel Sefton, Douglas, this evening at six o'clock, to give competitors an opportunity of asking questions on any point in connection with the rules.

There are sixty-seven entrants for the Senior T.T. race, and thirty-seven in the Junior event In each case the unlucky number thirteen has not been allotted. There are twenty-five private owners in the Senior, and eight in the Junior race.

To all intents and purposes there are four series of rac in the Isle of Man. In past years the battle of the cylinders has proved almost as exciting as the race itself. The single-cylinder riders consider that they are too much handicapped against the twins of 85 c.c.



Three T.T. machines on the Liverpool landing stage prior to being taken to the Isle of Man. The owners are getting tickets for the machines, one of which is a New Hudson and the other two Humbers—all with three-speed gears. One of the latter caught fire in starting on the Douglas promenade.

In the Junior T.T. there are twenty one single-cylinder machines out of the thirty-seven entered, and the Senior T.T. entries are divided into forty-three singles and twenty-four twin-cylinder machines.

It has been estimated that it is worth nearly £200 to a trade rider to win the Tourist Trophy. Apart from the £40 cash offered by the A.C.U., a windfall from the makers of the tyres, belt, magneto, carburetter, petrol, and the oil employed by the winner usually follows.

In the Senior event entries are split up as follows: Triumph and Rudge, 9; Matchless, 7; Indian, 5; Bat-Jap, Ariel, and Singer, 4; Scott, N.S.U., Zenith, and Dot, 3; Blumfield, Premier, Norton, and Rex, 2; and 1 Bradbury, L.M.C., M.R., Calthorpe, and Ivy-Precision.

Examination and sealing of the Senior T.T. machines takes place on Saturday at 10 a.m. at the Woodlands, Douglas.

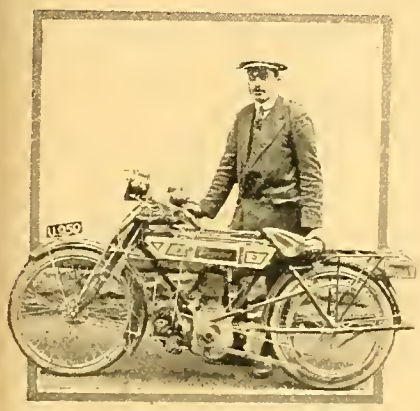
The three German riders of N.S.U.'s have brought over very fast machines, and with Jake de Rosier—the American who has come over specially for the race—so confident of success, an Englishman will have to put forth all he knows to win. The Collier brothers are again favourites with the crowd.

The kilometre speed trials to be held on the Douglas promenade next Tuesday include the following four classes: (1.) A handicap race for local residents. (2.) For machines conforming to the Junior T.T. regulations. (3.) For machines conforming to the Senior T.T. regulations. (4.) All comers race. Engines up to 1,000 c.c. greater capacity, and consequently fight out a little duel of their own for first place. It will be a big honour for the single-cylinder rider who finishes first of the forty-three entered.

On the race days there will be depôts at Douglas and Ramsey at which spare tyres, petrol, water, and lubricating oil may be taken in during running time.

One of the printed instructions issued to competitors was: Although silencers are not compulsory in the actual races, they must be fitted throughout the whole of the practising. Any competitor driving a machine without a silencer or with a cut-out during practice, or whose machine makes any noise likely to inconvenience other users of the highway, will render himself liable to disqualification. How many heeded the warning?

The Motor Cycle Tourist Trophy Races.—



W. E. Grange with the special 85 × 88 mm. Bradbury, which he will ride in the Senior event.

The New Hudsons have everything brazed on and every nut is split-pinned.

His Excellency the Lieut.-Governor will present the Junior Tourist Trophy to the winner at the Douglas Palace on Friday evening, and the Senior T.T. on Monday evening.

A doctor has been in attendance with his motor car at Quarter Bridge during the practising in case of accident.

We predict that one of the biggest surprises will be the speed of the Junior T.T. machines. Some of them will attain a speed of over 55 m.p.h., and speeds of 50 m.p.h. are quite common with these diminutive engines.

The Armstrong-Triplex three-speed gear is strongly represented in the Junior Race. The Humber, Matchless, New Hudson, Martin, etc., have this increasingly popular hub gear, the middle direct speed of which is found to be especially useful in the ascent of Snaefell and Creg Willey.

After seeing the course, M. Gentil decided not to use a variable gear on the T.T. Alcyons, but had the back hub fitted with a chain wheel on each side, one large and the other small. By means of reversing these, in cases of emergency the gear may be reduced about seventeen per cent. A special arrangement is made whereby the change can be effected in a few seconds, and the chain may be tightened at the same time. The headquarters of the Alcyon firm will be the Sefton Hotel, Douglas.

Asked what he thought of the course Jake de Rosier, who has been in the island since the first practising morning, said: "Well, I think the course is an ideal one for testing a motor cycle, and the man who wins deserves all he gets." He did not consider it a strain on the rider, as the race was not long enough. De Rosier has practised on a two-speed 7-9 h.p. Indian, his T.T. machine not having arrived from the States until this week. He sustained three falls the second day out—one rather serious tumble which cut his arms badly—but resumed practising two days later.

Ariel.

The most obvious T.T. development in the Ariel racing machines is the employment of a dropped top tube, used for the first time on this make of motor cycle. In addition to being low the frame is also considerably shorter, and the engine is thereby brought a good deal nearer the rear wheels than is the case on the touring model. The wheelbase is only forty-nine inches, so that the machines may be expected to show up well on corner work. The only differences in the engine are in the employment of larger valves and ports, the design of the special timing gear, and the use of a very large outer pulley flange. The last is a direct result of last year's experience, as in the 1910 T.T. a good deal of time was lost by the belt jumping the pulley. Evidently it is not intended to allow the same thing to occur again.

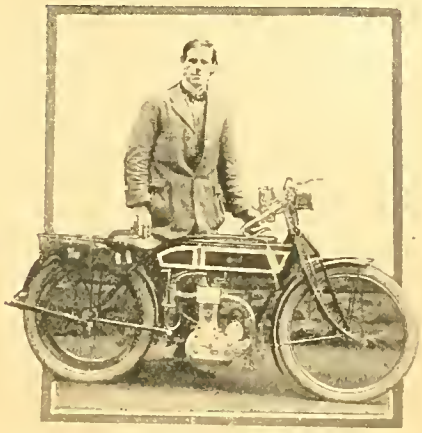
The carburetter is a new type B. and B., and is fitted with an extremely long extra air intake tube which stretches back from the engine to a supporting clip on the saddle stay.

Lubrication is by a very large Best and Lloyd hand oil pump with drip-feed tap.

L.M.C.

We have already mentioned the new two-speed engine-shaft gear to be used by J. H. Slaughter on his L.M.C. We notice that the belt pulley is adjustable in a very simple manner, and is capable of giving a tolerably large range of gears, apart from the positive gear box altogether. The outer flange is screwed left-handed on the sleeve, and the drive brings it up against a lock-nut which can be set with a spanner, or even with the finger and thumb, to any position.

The engine is the standard L.M.C.



Fred Mackay with his 3½ h.p. T.T. Singer. This machine has covered-in valves. Mackay will use his own special design of carburetter.

85 × 88 mm., and has the special connecting rod and piston attachment recently described in these columns. The piston has only one ring at the top, and, thanks to the arrangement of the gudgeon pin, which with its brackets is bolted to the piston head, is remarkably light.

Rigid forks are used. The tank capacity is 1¼ gallons of petrol and 1 quart of oil

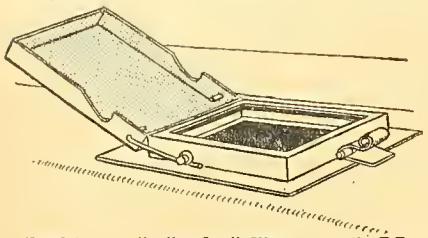
Special Points of the Rudge.

It would be hard to devise a more thoroughly business-like scheme than that with which the Rudge people are tackling the T.T. The entire accommodation of the Glen Helen Hotel has been taken and an outhouse has been turned into practicable garage. Near to the R.-W headquarters (Glen Helen Hotel) are rooms containing a store of spare parts

The Rudge-Whitworth headquarters in the Isle of Man, the Glen Helen Hotel. Mr. V. A. Holroyd, who is in charge of affairs, standing outside the hotel with some of the Rudge riders.

The Motor Cycle Tourist Trophy Races.—

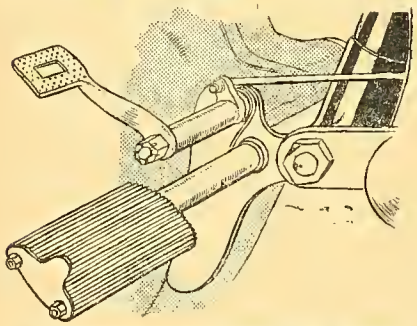
etc., and quite a useful workshop full of tools. The Rudge machines are of numerous kinds, all of which are receiving a thoroughly sound testing, which, however, has not at the moment of writing



Novel type of "cellar flap" filler cap on the T.T. Rudges.

been carried to the stage at which it is possible to say what models will be used in the race. In addition to the ordinary 3½ h.p. standard T.T. model (single geared), there are similar machines fitted with Armstrong-Triplex three-speed gears in the back hub, some with N.S.U. two-speed gears on the engine-shaft, some ordinary clutch models, and one with a Mabon infinitely variable gear. Thus in the Rudge entries one may see all three different methods of attaching the change speed gear, and it will be extremely interesting to see which type proves the most effective.

The Mabon gear consists of a chain-driven expansible pulley arranged upon a radial arm in such a manner that as the pulley is expanded the arm is operated to bring the pulley farther and farther away from the belt rim. Thus the belt



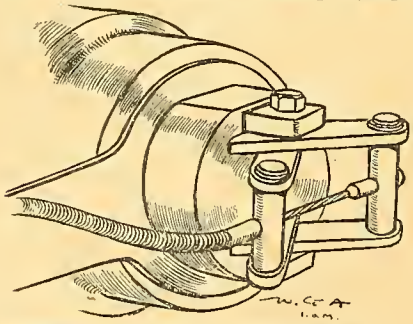
Method of mounting the foot-brake pedal independently of the foot-rest to avoid damage in case of a fall.

is at all times in uniform tension. The gear is controlled by a long lever which works in a five-slotted quadrant arranged underneath the tank and on the left-hand side. One of these notches gives a free engine position, the other four positive gears in proportionately decreasing ratio.

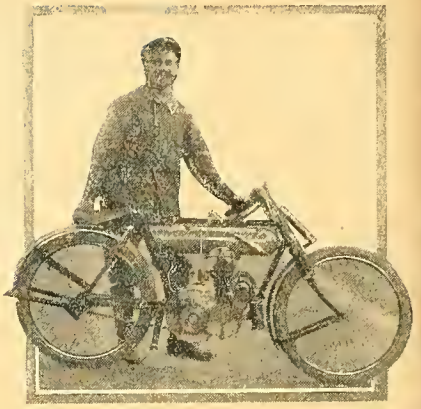
Although the Rudges are practically standard practice, one or two refinements and racing "touches" have been added. The most noticeable departure is the employment of large filler caps both for petrol and oil. The hole opened up by the "cellar-flap" spring door measures at least 1⅝in. The tank capacity of the R.-W.'s is two gallons of petrol and a half gallon of oil.

The foot brake, which actuates a fibre shoe working in the V of the belt rim, is not carried upon the bar of the footrests, but upon a spindle of its own, which is considerably shorter than the footrest crossbar, and is therefore almost perfectly protected from damage by the latter. In the same way, the handle-bars have been cunningly curved and proportioned, so that when brought into an extreme position, as they would be if a toss were taken, the end of the grip misses both tank and engine, and is consequently capable of doing no harm.

A particularly neat and decidedly original method of actuating the N.S.U. gear has been devised. This gear is thrown in and out by a horizontal sliding sleeve, and the latter on the Rudges is operated by an ingenious form of scissors-lever which works on the cam principle. It will be seen from the sketch that there are practically two sets of cross levers, the extremity of each one of which on its inner and shorter end is provided with a rounded cam formation which bears against the end of the sliding sleeve. The levers are connected by vertical cross pieces, one of which is attached to the inner cable of a Bowden wire mechanism, whilst the other is brought to the end of the outer cable. Thus a perfectly even and balanced pull is given to the toggles. At the same time, a large overhang from the pulley is avoided, and maximum amount of accessibility is available. Should this method of operation prove satisfactory, it may be adopted as standard.



New method of actuating the N.S.U. gear, operated by Bowden wire from the handle-bar.



Michel Canale and the chain and gear-driveo Alcyon he will ride in to-morrow's race.

ONE OR TWO DISTINCTIVE COSTUMES SUGGESTED BY VARIOUS RACING GARBS SEEN AT BROOKLANDS.

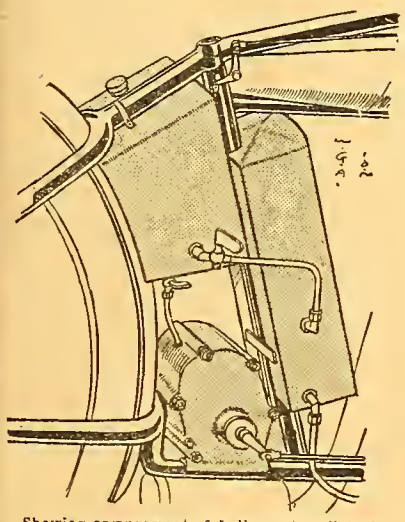
Mephisto. The Silent Knight. The North Pole. The Diver. The Begeyman.

The Red Indians.

The smart-looking bright red Indian machines arrived at their quarters, the Quarter Bridge Hotel, last Thursday, and at the time of writing are going through their preliminary canters previous to taking the road at practice. The most noticeable feature of the Indians—after their striking colour—is their compactness and remarkably clean design; indeed, it is something of an achievement to have got a counter-shaft gear box into a short wheelbase frame without imbuing the whole affair with any suggestion of clumsiness. The neat little twin engine, rated at 4½ h.p., is practically a reduction of the 5 h.p. or 7 h.p. model, and is furnished with the characteristic Indian features—overhead inlet valves, mechanical oil pump, detachable cylinder heads, etc. To allow for the introduction of a two-speed gear, the flywheels and crank chamber are considerably smaller than in the ordinary 5 h.p. model, but in spite of this the engine runs with remarkable smoothness and balance, and, of course, its power of rapid acceleration—a valuable quality over a course that abounds in bad corners—is decidedly enhanced.

The gear box is situated in the usual Indian position, and, as shown in the accompanying sketch, the rear chain stays have been upturned to afford it a snug cradle. The actuation of the gear box is the same as usual except that the latch, which is of rather different design to standard, is situated close up to the

The Motor Cycle Tourist Trophy Race.— handle-bars so as to avoid the necessity for the rider to sit back when changing speed. A jointed handle-bar of the older Indian type is used, and, it goes almost



Showing arrangement of Indian extra oil tank and two-speed gear box.

without saying, the control is by means of the well-known twisting grips.

As ordinary footrests are used, a rocking clutch pedal of the ordinary type is out of the question, and instead a side hand lever is employed. This is placed on the right-hand side of the large two-gallon petrol tank, and is connected directly to the internal quick thread drum which actuates the clutch. The lever, thanks to this arrangement, can be set in any position so as to admit of any required amount of slipping.

As indicated in the sketch, an additional oil tank has been installed between the seat tube and the mudguards, and has its outlet connected up to the ordinary sloping tank. At the same time, a pipe is taken straight to the gear box, and the tap having been correctly adjusted the latter is served steadily and uniformly on the drip principle. In contradistinction to the exhaust piping arrangement of the 7 h.p. model, the 3½ h.p. T.T. engine has its forward exhaust pipe brought sharply downwards almost parallel to the cylinder walls, and passing behind the magneto is swept backwards into the silencer. The cylinder head is held down by three bolts instead of the usual four, this being practically the only point in which the design of the engine differs from standard practice. The bore and stroke are 70 × 76 mm. The sparking plugs are carried in the cylinder heads.

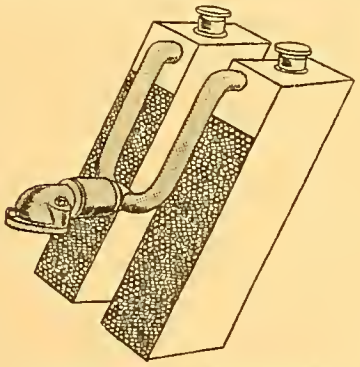
Spring forks of the latest leaf spring type are used.

The gears are 3½ to 1, top, the second gear giving a forty-five per cent. reduction.

The Indian is strongly represented. Four of our best known riders, as well as the American champion, will strain every effort to capture the coveted trophy.

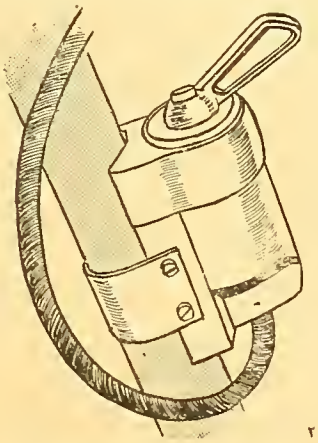
The Two-speed T.T. Douglas.

The Douglas two-speed machines are standard—even to the stand, carrier, and tool cases—in every respect but two, one of the exceptions being the long extra air pipe lying parallel to and above the



Rex twin radiators which are mounted pannier fashion on the front down tube.

hot air main intake which abuts close against the radiating flanges of the rear cylinder head. Although the stroke of the engine is on the short side—the dimensions are respectively 60 × 60 mm. —the large outside flywheel is immensely valuable in hill-climbing, and the machines, in spite of a moderately high top gear, have done some fine work up Snaefell. At the same time, extremely high speeds have been reached—a result which is no doubt largely traceable to the



Rex switch for triple set of sparking plugs. It is attached to the seat tube.

fact that the diameter of the inlet valves has been increased about 5 millimetres. W. W. Douglas's machine has been on the road some weeks, and he has ridden it in several reliability trials, so he is a practically certain survivor.

The Rex Water-cooled Engine.

A photograph of this interesting experimental machine will be found on page 671 this week, and the accompanying sketches are therefore, directed towards some of the details of the design. The honeycomb radiator consists of two self-contained units each complete in itself with water tank and filler caps. The outlet pipe from the engine is branched up to them as shown in the first figure, the joint at the cylinder head being made with a neat dome.

The cylinder, in addition to having the usual four bolts passing through the flange at the base of the liner casting, is for additional security held down with two long external bolts.

There are no less than three independent sparking plugs, one in each of the side by side valve caps, and a third in the cylinder head on the opposite side. The plugs are not intended to be used all at once—that would be beyond the

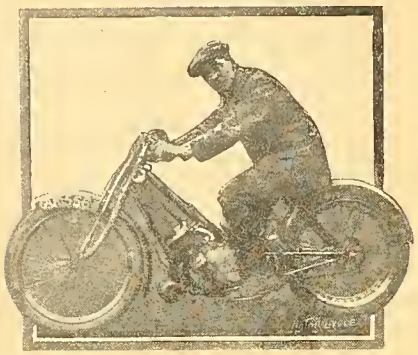
PRACTISING IN THE ISLE OF MAN.

H. A. Collier (Matchless-Jap) passing through Union Mills.

H. H. Bowen (Bat), S. Wright (Humber), and B. V. Jones (Premier) nearing Union Mills.

W. W. Douglas (Douglas) slowing down for Ballacraine Corner.

The Motor Cycle Tourist Trophy Race.—



Eric S. Myers and the T.T. Scott he will ride in the Tourist Trophy Race. This is the third year Myers has ridden a Scott in the T.T. Race.

limit of working of any ordinary magneto—but are controlled by a simple high tension switch which directs the current to either of them as desired. The switch, a sketch of which is given, is carried on the down tube just below the saddle, and is quite a neat little fitting in easy reach of the rider's hand.

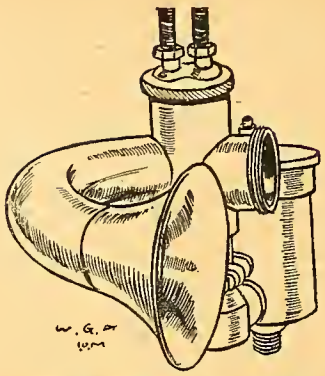
The lubricating oil is carried in a torpedo tank fitted above the main tank and provided with a glass-covered lid through which the amount of the contents may be seen at any moment.

N.L.G.

The N.L.G. lightweight which is being ridden by V. Wilberforce in the Junior race is a machine on thoroughly standard lines, with the motor in the accepted vertical position. The engine is a J.A.P., 76 × 65 mm., with overhead valves, and is fed by a B. and B. carburetter with some notable points, one of which is sufficiently obvious from the sketch. The extra air port is led to a belled trumpet mouth, which is pointed forward in such a way that in theory the air pressure induces a rapidly moving column of air across the jet, to a certain extent forcing mixture into the cylinder. A similar device is used on a large number of Brooklands racing cars, and there is no doubt at all that it has decided advantages in ordinary circumstances and when the port areas, etc., have been calculated to a nicety. To make the forced draught idea as efficacious as possible, the carburetter choke tube has been reduced in length, so that the jet orifices are about a quarter of an inch only below the transverse passage through which the air enters, and hence the moving air has all the better chance to eject petrol from the jet, and so throw it into the cylinder directly the valve opens, without having to wait for the engine suction to come into operation.

The jet, as shown in the smaller sketch, has undergone alterations, consisting of plugging up the original orifice and drilling four proportionately smaller holes through the walls at right angles to the jet column. This allows the petrol to flow out at right angles to the column of fixed air admitted below the jet, and it is thought that thereby the vaporising qualities are considerably enhanced. The lubrication is by means of a J.A.P. drip feed with visible flow.

At the time of writing it has not yet been decided whether to employ a Millennium two-speed hub or a single gear.

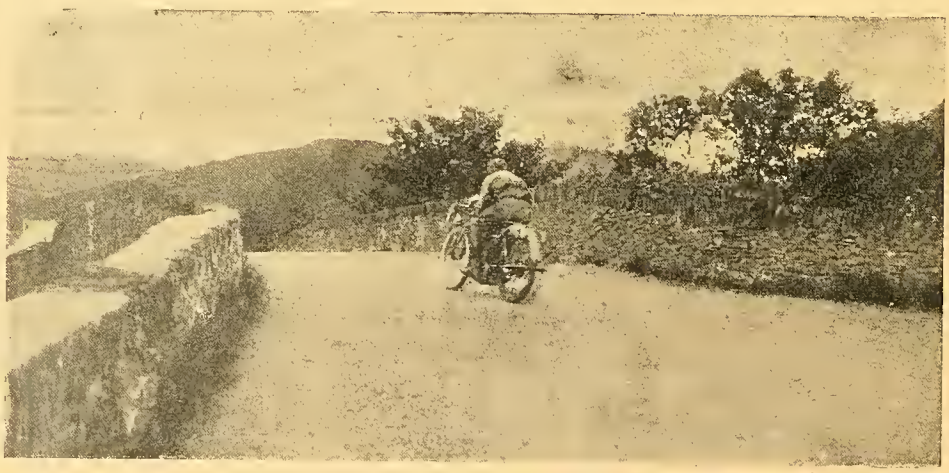


The trumpet-shaped extra air inlet on the N.L.G. It has the effect of forced induction.

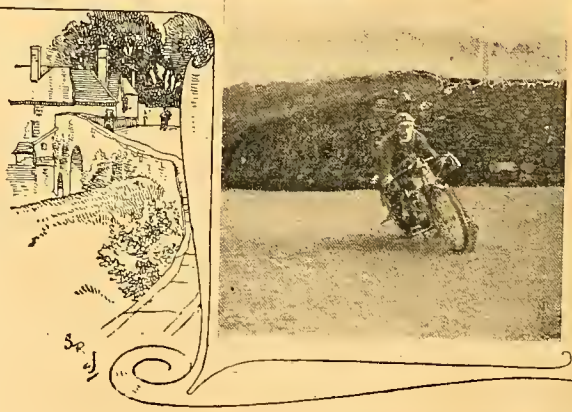
The New Hudson.

Like the majority of machines in both the Senior and Junior T.T. races, the New Hudson motor bicycles are almost exactly standard in every detail, exceptions being the employment of a combined petrol and oil tank of somewhat larger capacity than usual. This, on H. Rem Fowler's machine (which is extremely fast and capable of giving a remarkably good account of itself up Snaefell), is furnished with special filler caps to both compartments, a sketch of which is given on next page. These are quite on car lines, and, whilst of large diameter, are of the quick detachable variety, and consist of a bayonet joint, which can be screwed up for greater security. The lid is shown inverted in the

PRACTISING FOR THE TOURIST TROPHY IN THE ISLE OF MAN.

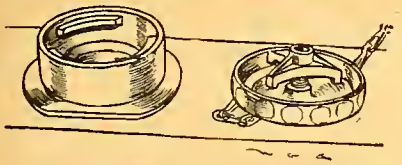


A competitor passing over Sulby Bridge.



At Kepple Gate on the run down the mountain side.

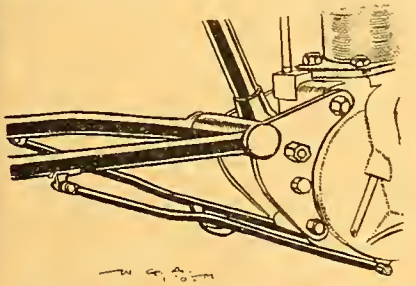
The Motor Cycle Tourist Trophy Race.—



The special filler cap on the New Hudsons.

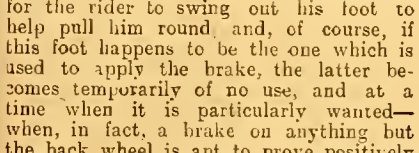
sketch, and carries a screwed stud, which engages with a tripod bayonet piece; the latter, when held by friction against the underside of the small lugs inside the fixed body of the filler, holds the lid firmly in position, and it is only necessary after inserting the cap to screw its head around a turn or two for the cap to be absolutely locked in position. To avoid any possibility of trembling fingers losing hold of the caps, the two are connected together with a brass chain fixed to the upper frame bar.

The second sketch depicts the way in which the rigidity of the New Hudson frame has been increased by the addition of a pair of connecting links which form a triangulation between the chain stays and the engine crank chamber. The links are further strengthened by being joined with a short crossbar. Simple as the attachment is it is of great use to a frame where many corners have to be taken, as it greatly enhances the machine's lateral strength.



Extra engine supports to give maximum rigidity as fitted to the Junior New Hudsons.

Another excellent point on Mr. Fowler's New Hudson is the arrangement of the foot brake, which, as demonstrated in the third illustration, is capable of being operated by either foot, and is placed close behind the bar which carries the footrests. The latter, therefore, form a protection for the brake. The idea especially shows its value when sharp corners are being negotiated, for it is often necessary for the rider to swing out his foot to help pull him round, and, of course, if this foot happens to be the one which is used to apply the brake, the latter becomes temporarily of no use, and at a time when it is particularly wanted—when, in fact, a brake on anything but the back wheel is apt to prove positively dangerous. The sketch shows how the brake is mounted by simply passing the crossbar through the "ears" of the plates which support the crank chamber from the bottom bracket. The pedals are worked by the heels of the rider, and are in such a position that the maximum thrust on them is available. The shoe of the foot brake works upon the outside of a special belt rim spoked to the tyre rim, and is placed above the chain stay, so that it tends in actual operation to force itself harder and harder "on." The value of this point is making itself more and more apparent, to judge from the fact that on one or two machines the shoe, which was previously below the chain stay, has now been placed above it.



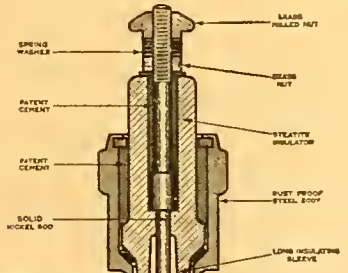
The twin pedal foot-brake on Rem Fowler's New Hudson.

New T.T. Lodge Plug.

An additional type of the Lodge sparking plug has been specially made for this year's races. The insulation is of steatite instead of porcelain, and this is cemented

A. V. Sumner and his three-speed Senior T.T. Ariel.

up solid with the steel body of the plug. The three sparking points are in one piece of pure nickel, and the centre rod is of a substantial thickness and also of pure nickel. The special construction of the plug enables it to be formed with a long insulating sleeve without increasing the total length. The Lodge plug is specially suitable for engines which are copiously lubricated, and a considerable number are, we understand, being used on the T.T. mounts.

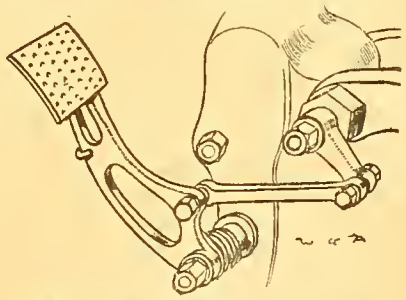


Section of the new Lodge three-point steatite plug, showing its construction.

The A.K. knee grips are now well established as an aid to motor cycle racing. These grips will be seen on many machines in the two races, and a number of riders testify to the ease with which they can steer when using them.

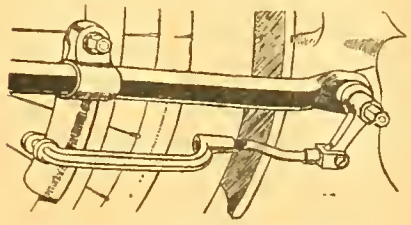
The Ariel.

The accompanying sketches show the two sides of the new brake arrangement which has been fitted to the Ariel machines so as to allow the foot brake shoe to be applied to the special brake rim used in conjunction with the ubiquitous Armstrong-Triplex hub. In



Pedal side of the Ariel brake, showing mounting independent of foot-rest.

the ordinary way the brake takes effect upon the driving belt rim, which is on the left hand side. With the Armstrong gear, however the brake rim is on the right, and the brake has, therefore, to be carried across the frame. Here, again, the mounting of the pedal is completely independent of the footrests—a desirable point frequently urged in these columns even in the ordinary touring machine. There are already numerous signs that the use of a really difficult course is being productive of decidedly good results in the brake line especially,



Shoe side of the brake and fittings on the T.T. Ariels.

and it is not unnatural to find that a great deal of attention is being focussed upon this vital part of the machine which might otherwise have been less close if the course had not been so abundant in difficult corners and sharp pitches.

ADVANTAGES OF THE NEW COURSE.

There is little doubt that, great as was the outcry that was raised when the Snaefell course was chosen by the A.C.U., everyone concerned with the race is now persuaded of the general desirability of the 1911 T.T. course, and we are assured that its use must not only result in a race that will provide exciting going and a test of the machines that should satisfy the most exacting critics, but also prove most beneficial to the development of a variably geared motor cycle, capable of going anywhere and doing anything. When the practising first commenced it was generally heard on all sides that the course was too difficult, and, indeed, there is no masking the fact that it is perhaps a little more trying to the man than to the machine. Opinions have, however, been rapidly modified by experience, and practically everyone is now agreed that the route is all the better for being longer,

The Motor Cycle Tourist Trophy Race.—

and more full of incident than that of last year, and more sporting. Some have gone so far as to describe the course as dangerous, but to a level-headed rider it is certainly not so. Some motor cyclists, it will be agreed, can make danger where none previously existed, and, unfortunately, the list of competitors includes one or two of this description, but, so long as nobody is heedlessly reckless, there is no reason why any but the most trivial mishaps need occur.

Concerning the lightweights, it is just possible that the new course will prove a little bit too tough for a type of machine which has not shown a remarkable rate of development along the lines of a road racing mount. There is, however, every indication that these little fellows—they are a sturdy and strong pulling little crew—will surmount all the difficulties quite successfully. Practice, and especially T.T. practice, is notoriously deceptive; hence it is not possible to know all the ins and outs of what is going on.

Surprising Speed of the Juniors.

It is common knowledge that some of the "lightweights," so-called, come very near to holding some of the Senior machines, and their performances have opened the eyes of a good many of the heavyweight brigade on the Snaefell up grade. In both races it is more than probable that the mountain climb will weed out a goodly number of the competitors, and this even if the weather be clement. The prevalence of a wind, however, will very seriously affect the number of men who complete a couple of circuits—a fact which seems inevitable after what has been disclosed during practice. Hereabouts the wind is tantalisingly deceptive, and more than a few riders in practice have returned to Ramsey full of surprise that their engines have coughed themselves to a standstill on a gradient. The course, which is 37½ miles long, comprising practically an inner circle of the northern half of the island, starts at Woodlands, about half a mile north-east of Quarter Bridge, on the mountain road from Douglas to Ramsey.

The first notable incident is Quarter Bridge, a sharp right-handed turn which is hidden by trees and approached by a stiffish down grade that makes careful driving a paramount necessity; from here the Peel road is taken, and within a few hundred yards a second bridge—hard by Kirk Braddan—has to be negotiated. This is a sweeping bend which brings the speed down somewhat, but it can be taken tolerably freely. The road twists and turns through Crosby to Ballacraine Hotel, where the well-known right-hand turn is taken on the road to Glen Helen. Ballacraine Corner is approached from a different direction from last year, and the result is that whilst the actual turn is much the same it is far more easily seen, and can therefore be taken at a sufficient speed to give one a good start up the ensuing gradient. It will be remembered that last year an artificial banking was erected at Ballacraine, but this year, thanks to the wisdom of the A.C.U., the course is entirely innocent of impedimenta, although it has been seriously suggested by several competitors that Sulby Bridge would be all the better for a few bundles of hay and a feather mattress or two to take the sting out of the stone parapets!

Ballig Bridge, a Favourite Point of Vantage.

After leaving Ballacraine the road passes over Ballig Bridge, where it is quite the usual thing for the faster machines to leave the ground completely for a yard or two, and twists and twirls through the narrow valley until Glen Helen is reached, where it turns off to the left, and rises abruptly over Creg Willey—a trying gradient, quite capable of taking a lot of the tune out of a machine unless it is going in tip-top form. Along the level at the summit the course is very fast, and the road in excellent condition down the hill to Kirk Michael, where the course bends eastward through Ballaugh (with a nasty twisty bridge at the entrance to the village) and Sulby (with perhaps the most difficult piece of corner work in the whole course). Between Ballaugh and Ramsey the road is really execrable, full of pot holes for mile after mile, and treacherously greasy under the trees, but it improves considerably on leaving Ramsey on to the Snaefell road. For the last seven or eight miles the course has been almost dead level, but Snaefell soon provides a strong contrast to this sort of going, and once round the villainous hairpin at the foot it is nothing but a steep, steady climb, averaging in gradient about 1 in 10 to 1 in 12, until the summit is reached. After that the road dives down into the valley again, with many nasty twists and deceptive gradients. It is hereabouts that some extraordinarily high speeds will be achieved, for to a really good rider the water riven surface is not sufficiently terrifying to warrant any cutting out except at corners, of which there are many, the worst being at Hillberry and Willaston.

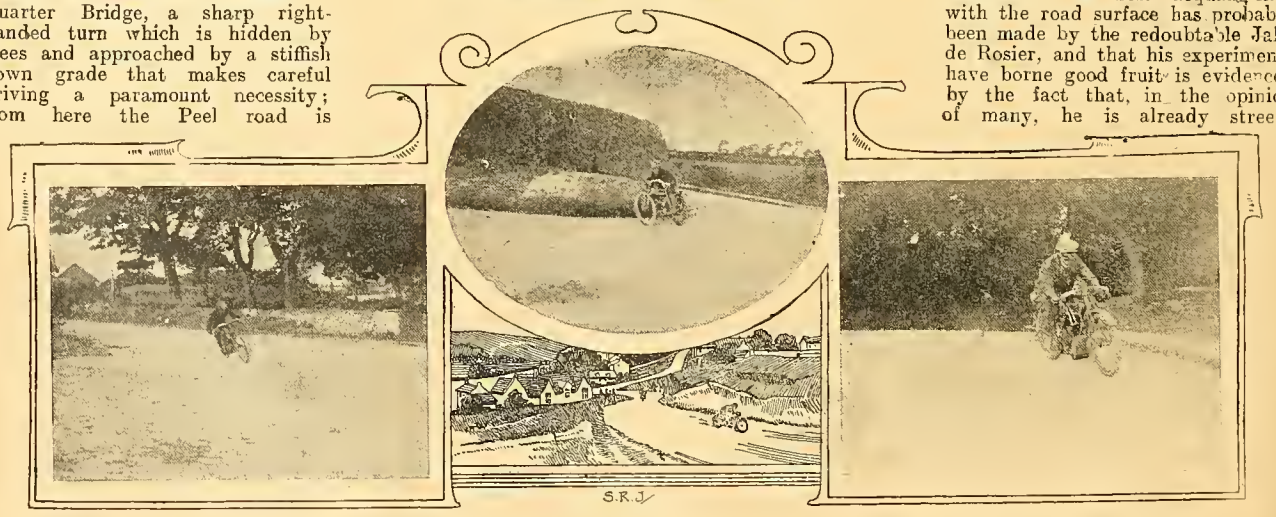
Willaston Corner and its Difficulties.

Willaston corner is a left-hander of the worst sort, as it has to be taken quite blind, and at the turn the road, besides being narrow, is banked the wrong way, and to make matters even worse the trees at the angle are inclined to make the surface rather greasy. After Willaston comes another sharp angle turn, this time to the right-hand, leading to a very fast stretch of broad up and down road which brings one out again at Quarter Bridge. At the time of writing (Monday morning) the practice has up till now been decidedly uninteresting and featureless for these two reasons, firstly, the number of competitors who have been over in the island during the past week has been, comparatively speaking, small, and secondly, the course is so long that unless there are a large number of riders out the machines appear only at long and irregular intervals. To make things even more tame, most of the riders, realising, wisely, that such a long route is not to be learnt in one lap, have contented themselves with taking things quietly. So many have been the stoppages for one reason or another that up till now it has been well nigh impossible to get a reliable estimate of what sort of times are being made.

Frequent Tumbles during Practice.

Tumbles due to various causes have been frequent, but no one has done much damage either to himself or to his machine. The best acquaintance with the road surface has probably been made by the redoubtable Jake de Rosier, and that his experiments have borne good fruit is evidenced by the fact that, in the opinion of many, he is already streets

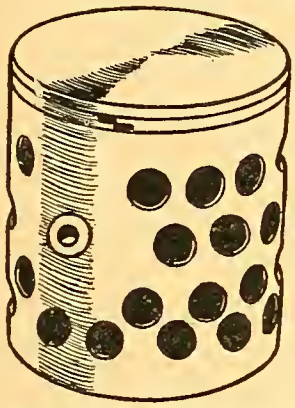
T.T. PRACTISING IN THE ISLE OF MAN.



Ballacraine Corner. Approaching Sulby Bridge. H. A. Collier coming over Quarter Bridge.

The Motor Cycle Tourist Trophy Races.—

ahead of most of the competitors at cornering, and quite the equal of such artists as Bowen and Moorhouse. Both

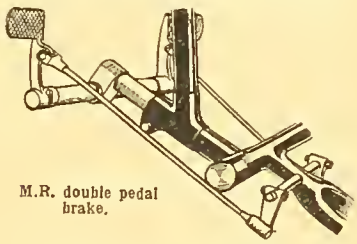


The single ring piston on the 3½ h.p. Premiers. The walls are liberally drilled, and the gudgeon pin is also drilled right through.

these riders have been putting in a lot of fine work, and the latter is already credited with the unofficial time of 42m. for the lap; this takes a bit of swallowing, it must be admitted, but it should be borne in mind that he, together with all the others of the Indian team, has been learning the course on 7-9 h.p. machines, the 3¾ h.p. models having only recently arrived. The Colliers have been going quite steadily, not attempting anything sensational at all as yet, and most of the others have wisely taken a leaf from what has proved a very successful book. The Rudge contingent have been up betimes, and have put in some fine performances, as have also the Triumph riders. The rivalry between the competitors on single-cylinder machines is likely to prove very keen. The water-cooled Rex has been travelling very satisfactorily, as have also some of the Ariels and the Bats. Lightweights have not been very much in evidence, but those that have turned out, viz., N.S.U., New Hudson, Matchless, Humber, and Douglas, have been doing very well, especially the new twin 2¾ h.p. Humber with its offset cylinders, which has a fine turn of speed.

Monday Morning's Practising.

In spite of driving rain and a bitter cold north-west wind, there was a good turn-out of competitors on Monday morning, and, in view of the weather, the crowd of spectators at Quarter Bridge was quite a creditable one. Nobody attempted to do any very fast running, but Franklin managed to get round in 58m., and several others took only a little more than an hour, some of the lightweights, notably the N.S.U., doing quite well. The bad weather of Sunday had brought down some of the red flags erected by the A.C.U. to mark the approach of bad corners on Snaefell, and their posts had carried away some telegraph wires, one of which Bowen very thoughtfully placed on the right side of the hedge. The Scotts appeared for the first time on Monday, and Myers did a very good round, considering it was his maiden trip on the new course. The following new points are embodied in the T.T. Scotts: the dimensions have been increased to



M.R. double pedal brake.

74 mm. bore by 62 mm. stroke, and a chain-driven rotary distributing valve has been introduced into the transfer ports. The carburetter is quite new and has two separate jets and two independent automatic air valves; both throttle and air are now worked on the same side of the carburetter. The radiator is rather smaller than that on the standard 3¾ h.p. model, and must be very efficient, for after a fairly quick lap Applebee's was scarcely lukewarm. The crank chamber is now almost globular, having been considerably rounded off in front. The transmission is standard, but the gears have been raised to 3¼ to 1 on the top

INCIDENTS OF PRACTISING FOR THE TOURIST TROPHY.

W. F. Newsome (Triumph) taking Ballacraine Corner.

C. B. Franklin (Indian) nearing Crosby, three miles from the starting point.

Hugh Mason (4 h.p. Matchless-Jap) leaving Ramsey on the first ascent of Snaefell.

K. Gassert (N.S.U.) passing through Union Mills.

Early morning scene at Quarter Bridge.

The Motor Cycle Tourist Trophy Races.—

and 4¼ to 1 on the low. Owing to the small size of the rear wheel sprocket the usual internal expanding brake is out of the question, and in its place a rim brake is installed on the right hand side, and takes effect on a special belt rim carried by the spokes. The way in which the Scotts get away from the mark is quite sensational, and the busy hum of their engines, far and away the quietest of the competing machines, is admirable. Other machines to turn out for the first time were the 2¾ h.p. Martins with 76 × 65.5 J.A.P. overhead valve engines and Armstrong triplex hubs.

Tuesday's Practice—A Fine Turnout.

Tuesday, so far as weather and road conditions were concerned, was quite the finest since practising began. The roads were dry and sufficiently recovered from the deluges of the past three days to be hard without being dusty, and now that nearly everybody concerned in the racing is over in the island no one was surprised to see a record turn-out of competitors and a good crowd of spectators. Something like seventy riders were going round the course, and the result was a good indication of what the Senior race will be like. Waits of as many as five minutes were not infrequent, but they were alternated by brisk moments bringing forth three or four men in a bunch. The Alcyon team were out for the first time, and contented themselves with touring round. They arrived last night, and are riding standard machines (except for the transmission), which are noticeable for the smallness of the wheels. An illustration of the Alcyon to be ridden by Gabero appears on page 652 of this issue.

Thanks to good racing conditions and an absence of wind, some good times were put up, the star performer being D. C. Bolton, who on a Martin-Jap 2¾ h.p. lightweight completed the course in a shade under 50m. (unofficially timed). Godfrey on a 3¾ h.p. Indian did two steady consecutive laps at 50m. also, whilst Sam Wright, who never made any attempt to get down to the last second, made a couple of good circuits of 57m. each. Colver on the Enfield was travelling very fast and uniformly, while Philipp hummed along at a tremendous speed on his Scott, which make of machine seems to stand as good a chance as any, as it is phenomenally fast up the mountain. As in the case of the Indian machines, the difference between the high and low gears is comparatively small, and the machine is almost as fast on the one as on the other; the Scott, for instance, does under favourable conditions rather more than sixty miles per hour on low gear.

Accident to Surridge.

V. J. Surridge had a bad spill near Glen Helen, and is reported to be dangerously injured. Tessier on a Junior Bat had a front tyre blown off in coming down the mountain, and received a severe shaking, whilst one or two others met with trouble at various places without doing themselves or their machines much harm.

The Track for the Speed Trials.

The speed trials of July 4th are to be held upon the long strip of concrete that stretches along Douglas Bay and forms the outer promenade. It is not particularly wide, but has a good surface, and where it is intersected by cartways down to the beach the track has been made up with asphalt. De Rosier, by way of testing it, has ridden along at about sixty miles an hour, and reports it to be, in his opinion, safe for anything up to 90 m.p.h. The track has a bend from start to finish, and has, properly speaking, no "straight," but the radius of the curve is so larg that this fact should scarcely affect the speed at all, especially as the concrete is slightly banked in the right direction.

Tuesday, 9.30 a.m.

We regret to announce that the first reports of this morning's accident have proved too sanguine. In attempting to take at too high a speed one of the turns with which the twisty road to Glen Helen abounds, Surridge fouled a grass bank, was thrown into the middle of the road, and instantly killed. The fatality has cast an indescribable gloom over everyone concerned in the race, and has dashed to the ground the well-founded hope that this year the T.T. would be free from any serious mishap. The cause of the accident may clearly be put down to an error of judgment.

Victor J. Surridge is dead. The sympathies of the whole of the motor cycling world will be deeply stirred. Victor Surridge was quite in the prime of his youth, and for that reason inclined, perhaps, at times to allow his enthusiasm to outrun his discretion. He had had, however, some considerable experience of motor cycle racing on the track, but this year's Tourist Trophy Race was to have been his first important contest upon the road. He was but nineteen years of age, and was a fearless rider.

It was only a few weeks ago that he broke the hour single-cylinder record at Brooklands, and although comparatively a new comer, that wonderful performance gained for him a position amongst the leading riders of the day. His quiet unassuming personality made him popular and beloved amongst all his fellow riders and his numerous friends, and his loss is an irreparable blow to the sport of motor cycling. In particular we offer our sincerest sympathies to his parents and relatives, and also to his employers, the Rudge-Whitworth Co., who regarded him as a most promising young rider and set a high value upon his performances. On Monday Surridge was suffering from a severe cold, and by no means feeling in the best of health.

ANNOUNCING THE T.T. RACE RESULTS.

Where to see "The Motor Cycle" telegrams, giving the leaders at the end of each lap.

As we mentioned in a previous issue, arrangements have been made by *The Motor Cycle* with a number of firms in London and the leading provincial centres to display a series of telegrams on Friday, June 30th, and Monday, July 3rd, stating the names of the leading competitors at the end of each lap. This method of announcing the results, which we first adopted last year, is greatly appreciated by motor cyclists, and on this occasion we have considerably increased the number of receiving points for the telegrams. The following is a complete list of the firms with whom arrangements have been made for showing the wires, up to the time of going to press:

LONDON.

E.C.—A. W. Gamage, Ltd., Holborn; Hutchinson Tyre Co., 70, Basinghall Street; J. Piggott, Ltd., Cheapside; Richford and Co., 153, Fleet Street; Price and Co., Rosebery Avenue.

E.—Eastern Garage, 418, Romford Road, Forest Gate.

S.E.—Collier and Sons, Ltd., 18, Herbert Road, Plumstead.

W.—Godfrey and Applebee, Great Portland Street; Maude's Motor Mart, Great Portland Street; Selfridge's, Oxford Street.

W.C.—Hunt's Stores, 117, Long Acre; Service Co., Ltd., 292-3, High Holborn.

N.W.—Dunhills, Ltd., 359, Euston Road.

S.W.—Auto Cycle Union, R.A.C. Buildings, Pall Mall; G. N. Higgs, 31, Vauxhall Bridge Road; Michelin Tyre Co., Ltd., 81, Fulham Road, Chelsea.

BIRMINGHAM.—T. Clayton and Sons, 125, New Street; Bruce, Ltd., 81, New Street; Colmore Depot, 35, Colmore Row; Para Rubber Co., 93, John Bright Street; Premier Motor Co., Aston Road.

BRISTOL.—Eli Clark, 223, Cheltenham Road.

BRADFORD.—Eric S. Myers, 62, Manningham Lane.

CARDIFF.—Rurrelli and Co., 2, Albany Road.

COVENTRY.—*Midland Daily Telegraph*, Hertford Street.

DUBLIN.—F. A. Wallen and Co., 4, Nassau Street.

EDINBURGH. — Alexander's Garage, Lothian Street.

HALIFAX.—Halifax Motor Exchange, 16, Westgate.

HULL.—Embro Cycle Co., 191, Holderness Row.

LEEDS.—F. Greenwood, 212, Woodhouse Street.

LEICESTER.—Tom Cann, Ltd., High Street; T. H. Wathes and Co., 88, High Street.

LLANDRIDOD WELLS.—Tom Norton, Ltd.

LIVERPOOL.—Reliance Engineering Co., 29, Manchester Street.

MANCHESTER.—St. James Cycling Stores, 34, Oxford Street; L. F. Harvey and Co., 227, Deansgate; H. Reed and Co., 206, Deansgate.

NEWCASTLE-ON TYNE.—Rover Depot, 86, Northumberland Street; Percy Cycle Co., 87, Percy Street.

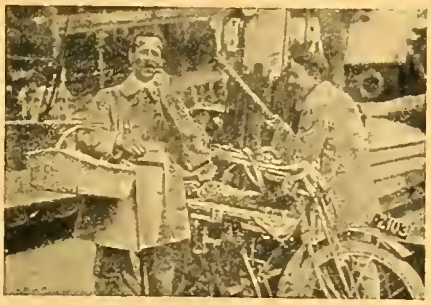
NOTTINGHAM.—Bentinck Motor and Cycle Co., Trent Bridge

ST. ALBANS.—New Century Motor Co.

SHEFFIELD.—Roper and Beeston, 166, London Road.

The Coast Ride Successfully Completed.

SINCE the particulars regarding Mr. Dover's coast ride were published last week (see pages 619 and 630), he has continued his journey down the East Coast, has crossed London, visited the whole of the South-east and South Coast watering places, touched Land's End on the 20th and 21st inst., and Bideford (Devon) the same evening. Here he found a telegram summoning him to Sheffield on important private business. This occasioned a break in the ride of about twenty-four hours' duration. Catching a train from Bideford at 8 p.m. he reached Sheffield at 7.15 next morning, attended to the urgent business for which he had been recalled, and returned by train to Bideford, continuing the journey northwards on Friday, the 23rd inst., reaching Cardiff the same night. Next morning a new move was made for Aberavon, *viâ* Aberystwyth, and the day following Llandudno was safely reached in spite of cold and wet weather. The last stage of the long journey of approximately 3,400 miles was commenced on Monday morning, *viâ* Queenferry Bridge and Birkenhead. Liverpool was reached at noon, and here our representative was in waiting to examine the seals of Mr. Dover's 3½ h.p. Premier, which has behaved magnificently throughout. Dover left for his home at Sheffield the same afternoon, completing 3,396 miles on arrival there the same evening, the time elapsed since the start being exactly three weeks.

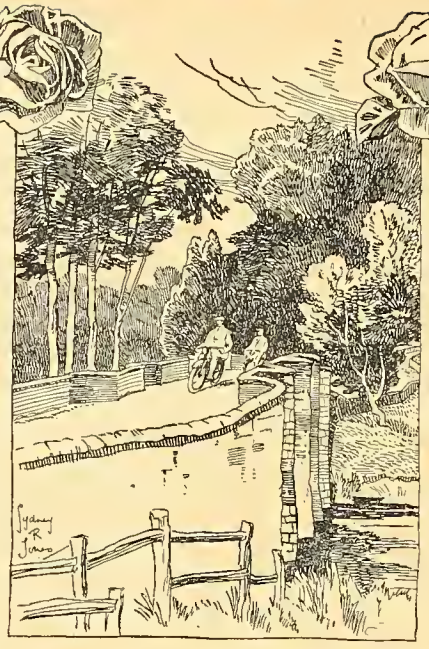


(1) Dover being checked into Hull by Mr. Walker.

(2) Partaking of an appropriated basket of strawberries on the ferry across the Humber. (3) Leaving Hull. Dover crossing the Humber by ferry.

Date	Route.	Miles.	Condition of Roads.	Condition of Hills.	Condition of Machine.	Remarks.
June 15	Sunderland to Bridlington	101	Good, except near Middlesbrough.	Fair, some stiff short climbs near Whitby.	Pulling well. Done nothing to it yet.	Had half a day off, met some Sheffield friends. Fitted new back tyre, weather fine and warm.
16	Bridlington to King's Lynn	192	Surface good. Between Hull and Lynn very difficult to find and very winding. Lost way.	No hills.	Not used any tools (except for punctures and belt) for over 600 miles.	A very uneventful day, fine, strong head wind. Have been unable to make 20 m.p.h. on these twisty roads. Rather tired of riding alone, want someone to dust up with.
17	King's Lynn to Southend	190	Good.	No hills.	Not yet cleaned it.	This morning very wet, but cleared off about 11 o'clock, rest of day very fine. Roads quite safe when wet. This part of coast not nearly so interesting as the North, more traffic and less scenery.
18 and 19	Southend to London, and London to Wareham	212	Very fair. Had considerable difficulty in negotiating London traffic.	No hills.	Still good.	A very mixed day—fine, wet, and strong wind all in turns, but nothing to cause serious inconvenience. Portsmouth was very gay with bunting for the Coronation, and was rather difficult to get through owing to wet tram-lines.
20	Wareham to Truro	198	Very good, except round Weymouth.	A good number of nice climbs, particularly Abbotsbury, fair condition but rather loose.	Pulling as well as ever. Not yet done anything except supply oil.	Heavy shower, rest of day fine. Met a good many pimples, but nothing to cause trouble. Had to gear 6 to 1 at Abbotsbury. To-day's run been most enjoyable on account of variety of conditions.
21	Truro to Bideford	180	Very good all the way, and well signposted.	No hills.	Good.	A perfect riding day—no sun, no dust, and no traffic. Regret to say found a telegram here (Bideford) summoning me home on important business.
23	Bideford to Cardiff	222	Very good, easy to find, rather twisty.	Good, except at Lynton, were loose surface and deep ruts, Countisbury a little better. Raining all day. Wet through.	Not yet given it any attention whatever, except the usual oil.	Left Bideford for Sheffield by train 8 p.m. Wednesday. Got to Sheffield 7.15 a.m. Thursday, attended to the business which called me home, hunted up my clubmate Shep Sawer, and persuaded him to return with me. Arrived Bideford 9.30 Thursday night, and started again Friday 7.45 a.m., having travelled 508 miles by train.
24	Cardiff to Aberayron	197	Fair.	Good, Fishguard just a little loose.	Very good, went up Fishguard first attempt, 4½ to 1 gear, in pouring rain.	A very trying day, fine up to noon, but after that pouring rain up to finishing point. Intended doing 250 miles, but was wet through and had to give up.
25	Aberayron to Llandudno	184	Fair, but winding, rather loose in places.	No hills.	No trouble, except slipping belt owing to excessive rain.	Rain, rain, rain! A very strong head wind all day, and bitterly cold.
26	Llandudno to Liverpool and Sheffield	172	Very good.	Cat and Fiddle (hardly a hill after Scotland).	No tool used on engine as yet.	Arrived Liverpool 12 noon. Met by our correspondent, who found frame and engine seals intact. Wet all day.

CURRENT CHAT



SPECIAL FEATURES.

T.T. AND SUMMER NUMBER.
Photographs and Latest Details of the Practising for the Tourist Trophy.

THREE NOMADS IN NORMANDY.

THE PROBLEM OF TIMING SPEED EVENTS.

TOURING TIPS.

Army Manœuvres.

As in previous years, the A.A. and M.U. has again been called upon by the War Office to supply a contingent of motor cyclists to act as despatch carriers during the progress of the manœuvres.

B.M.C.R.C. Open Meeting.

The following events are down for the B.M.C.R.C. Open Race Meeting, to be held on July 15th: De Rosier-Collier matches first race 2 laps (5½ miles), second race 5 laps (13½ miles), third race 10 laps (27 miles). In addition there will be a 10 laps open scratch race and an all comers' open handicap.

The Barnet Shooting Case.

What is described in the daily papers as "The Barnet Highway Outrage" reached another stage in the proceedings last week when, at the Barnet Police Court, Douglas Hay, of Angell Road, Brixton, was charged on remand with feloniously shooting Saul Splitters, of Stoke Newington, on the morning of the 3rd inst. Our readers will remember that Splitters was pushing his motor cycle on the road near Barnet on the date mentioned and was overtaken by a pedal cyclist who, after robbing him, shot him with a revolver. The prisoner Hay was committed for trial at the Old Bailey, and afterwards handed up a statement to the magistrates asking for legal aid under the Poor Prisoners' Defence Act. The Chairman of the bench said such application must be made to the judges at the trial.

An Important Case. Zenith v. Matchless.

An application was made in the Chancery Division on the 21st inst. for an interim injunction on behalf of Zenith Motors, Ltd., and others, against H. Collier and Sons, Ltd. The motion was to restrain the defendants until after the trial of the action from infringing a certain patent for a variable gear.

Justice Warrington refused to grant the interim injunction, on the condition the defendants kept an account pending the trial of the action.

M.C.C. Team Trial.

We have received a detailed list of the times taken by competitors in the above competition on the 17th inst., and it is indeed remarkable the regularity with which some of the competitors rode. Errors of less than one minute in the 26½ mile course are quite common, and it is a strange fact that some competitors who rode last year with watches were more accurate in their reckoning this year without any assistance at all. It goes to show that 20 m.p.h. is such a common speed among motor cyclists that it is less difficult for riders to average this speed than any other, whatever may be said to the contrary

E. Pond (Rudge) advises us that he rode in place of B. Marians in the M.C.C. team and accomplished a non-stop run, and incidentally made the best time of his team.

TIME TO LIGHT LAMPS.

June	30th	... ...	9.18 p.m.
July	2nd	... ...	9.18 p.m.
July	4th	... ...	9.17 p.m.
July	6th	... ...	9.16 p.m.

Fred Dover at Liverpool at the end of his Coast Ride on a 3½ h.p. Premier. He started on Whit Monday, finishing at noon on Monday this week—exactly three weeks later. (See previous page.)

The Honourable Artillery Company during recent training at Fargo Camp, Salisbury Plain.

Names reading from left to right: Private Townsend (———), Private W. G. Hoare (3½ h.p. Triumph), Gunner G. M. Locks (3½ h.p. N.S.U.), Private W. D. Cliffen (3½ h.p. Triumph), Bombardier G. F. J. Jarvis and Driver Williamson (5 h.p. V.S. and Mills-Fulford), Corporal Wheeler Evered (2¾ h.p. Douglas), Private L. V. Benham (3½ h.p. B.S.A.), Private J. P. Hart (3½ h.p. Triumph), and Gunner Edmondson (Metallurgique).

Motor Cyclists in the Royal Navy.

Ever since the inception of the pastime, motor cycle riding has been most popular with the practical naval officer. On the occasion of a visit to one of our latest "Dreadnoughts," we saw stowed away above the torpedo flat two Douglas machines and a Triumph. On this particular ship, the commander, the chaplain, and one of the assistant paymasters are, among other officers, keen riders. Those who keep their machines on board are real enthusiasts, when it may be realised that to enjoy a day's ride their mounts have to be lowered by bluejackets into a pitching picket boat, stood up on its scanty deck, and be protected from the spray during the passage. Then they have to be put ashore, and the same procedure has to be gone through when the day's ride is over.

The Edinburgh and District team which won the competition for the Hamilton Shield. Reading from left to right: R. H. Mouat (3½ h.p. R.W.), J. H. Forrest (3½ h.p. Triumph), T. B. Chalmers (5 h.p. Bat), R. Dobson (5 h.p. Indian), J. R. Alexander (7 h.p. Indian).

Ladies and the Motor Cycle.

Photographs of eight lady motor cyclists appear in this issue, a proof that now reliable change speed and clutch machines are available, the fair sex are not slow to grasp the opportunities offered of health and enjoyment.

A Nominal Fine.

The secretary of Rudge-Whitworth, Ltd., was haled before the Petty Sessional Court at Warwick, on June 21st, on the charge of riding his motor cycle over the foot-bridge at Kenilworth Castle. As there was water in the ford and no foot passengers in sight he naturally preferred to Rudge it than trudge it. The bench inflicted a nominal fine of 2s. 6d. and costs.

How the T.T. Race Results will be made known.

The results of the Motor Cycle Tourist Trophy Races will be announced to the motor cycling world by a series of telegrams arranged by *The Motor Cycle*. These wires will be despatched immediately at the conclusion of each lap, and exhibited by leading firms throughout the country. The list of addresses are given on another page of this issue.

The Motor Cycle Thief Again.

The following is a description of a machine which was stolen late on Friday evening in S.E. London: 2 h.p. Quadrant, Palmer tyres 26 × 2in., B. and B. handle-bar control carburetter, adjustable pulley, Whittle belt, belt rim brake, large luggage carrier with teak wood case containing dry battery, side mud shields fitted all round both mudguards, registration number LC 865.

The frame number of the Bradbury motor cycle stolen from Brooklands a few weeks ago is 32009, not 32029 as originally stated. The machine was provided with sidecar lugs, and had a Dunlop tyre on the back wheel and Clincher on the front. The owner is R. T. Preston, Clevedon House, Essex Road, Basingstoke.

24 Hours Trial in New Zealand.

R. S. Bender, the winner of the twenty-four hours' trial in New Zealand reported in last week's issue, rode a 5 h.p. Rex with two-speed gear and free engine; the second man, W. Hyslop, was on a 3½ h.p. Triumph. Hyslop arrived at the journey's end first, but his running time was not so near to schedule as Bender's, so the watch decided the winner.

Extra Prizes in the T.T. Races.

Competitors in this year's races whose mounts may be fitted with Bosch magnetos will be interested to hear that the Bosch Magneto Co. are offering most valuable prizes, viz., £25 each to the first arrival using Bosch magnetos in the two classes, and £10 each to the second home in each class using Bosch magneto.

Road Repairs.

Over two hundred and fifty replies have so far been received by the Roads Improvement Association to its circular to the highway authorities in regard to loose metal upon road surfaces and roadside grass verges.

London-Edinburgh Run.

H. R. Pratt (3½ h.p. Arno), W. Cooper (3½ h.p. Brown), and H. W. Turner Turner-Triumph), have each been awarded single journey gold medals in the above run. Unfortunately, their names were omitted from the list of medal winners published last week.

Six Days' Ride on a Lightweight.

H. V. Swift, of the Sheffield and Hallamshire M.C.C., completed his six days' ride on a 2¾ h.p. Douglas at 9.30 p.m. on the 21st inst., having covered 2,025 miles. The daily distances, routes, etc., were given last week, see page 626. In a telegram handed in at Sheffield within a few minutes of the completion of the ride, he says: "Finished 9.30 p.m. 2,025 miles in six days. Little Douglas stood the great test remarkably well." Mr. Swift was checked by members of his club and timed by a member of the staff of the *Sheffield Daily Telegraph*.

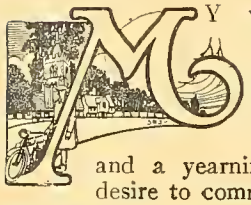
The 50 Miles Class C Record Beaten.

On the 21st inst. at Brooklands G. E. Stanley, on a 3½ h.p. Singer, 85 × 88 mm., 499 c.c., made a successful attempt on the fifty miles Class C record of 49m. 2s. held by V. Surridge on a Rudge-Whitworth. The evening was not favourable for record work as a strong wind was blowing down the railway straight. Stanley got inside record at the eighth lap, but plug trouble in the ninth lap caused him to drop outside. Gradually improving he was inside record again at the thirteenth lap, and continuing inside he beat the fifty miles record by twenty-five seconds. Time for fifty miles, 48m. 37s. A. V. Ebblewhite timed.

Inter-club meet of the Hull and Lincolnshire Motor Cycle Clubs at Brigg, Lincs. Some of the participants interested in Miss Queenie Davy's 2 h.p. Singer Moto-Velo. Miss Davy is said to be the only lady motor cyclist in Lincolnshire.

THE PRIVATE RIDER AND THE A.C.U.

By "IXION."



MY weekly postbag continues to bring me denunciations of the Auto Cycle Union, and as some of the letters exhibit a lamentable lack of public spirit, much muddy thinking, and a yearning for impracticable ideals, I desire to comment on some of the commonest criticisms.

The Public Spirit of the A.C.U.

The most frequent criticism is that of the man who is "on the make," and desires the maximum of personal benefit at the minimum of expense. It is probably the fact that the A.C.U. still offers these greedy individuals more than any other body, but it was founded and is run with more public spirited motives. It does not pretend to be a mutual benefit society, a small clique of men banded together for what they can get. It has done an enormous work, and all its workers have been honorary, with the exception of two or three salaried officials, who receive what is merely the stipend of a skilled clerk. Greater benefits could conceivably be provided by a body which devoted its funds to the interests of a clique limited to its members. The A.C.U. prefers to cater in a most public spirited way for the sport and industry as a whole. Its work affects the entire body of motor cyclists, and when there is a chance to provide a benefit, as in the T.T. race, the benefit is provided at a loss, and the loss is borne by the altruistic riders who comprise its membership. To take a single example, if the majority of the A.C.U. trials were organised by a journal or a social club, the entry fees would be higher and the management less impartial and efficient. The greedy, grasping type of rider will always be a malcontent member of the A.C.U., nor is his subscription desired.

Criticisms of A.C.U. Competitions.

The remaining criticisms are mostly concerned with the various A.C.U. competitions. For instance, one correspondent complains that the A.C.U. favours the trade as against the users. This is almost impossible, and certainly untrue. The interests of the trade and of the user are ultimately identical, as are the interests of capital and labour. Temporarily antagonistic, these interests mutually adjust themselves by degrees, but the help of an impartial mediator vastly accelerates the adjustment. If there were no A.C.U. we should see competitions organised by the trade and by the users separately. The trade would organise over-easy trials, which would teach us little and retard development. The users would organise now over-easy competitions, now over-difficult competitions; the former would be useless, the latter would disgust entrants and die a natural death after choking off much interest among potential buyers. The A.C.U. is practically an impartial amateur body, possessing just enough technical knowledge and prophetic judgment to fit it for the delicate task of performing these adjustments. It stands as a buffer between the interested motives of the trade and the crass ignorance of the keen but inexperienced users.

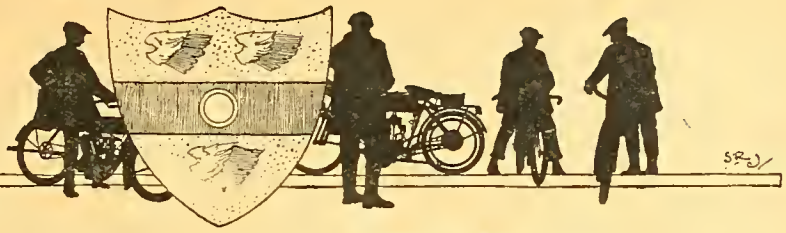
Next, it is asserted that the A.C.U. trials test the *men* too much as contrasted with the *machines*. I am glad to say that if a trial could be so arranged as to eliminate the personal factor, the sporting amateur would be the first person to express his disgust and withhold his support. If the machine only is to be tested, the engines must be run to destruction in a bench test, the fittings awarded marks in a room after the fashion in which poultry shows are run, and the machine as a whole tested by being violently "dithered" on a mechanical oscillator. Such a trial would indeed eliminate the personal factor, as sundry shallow critics demand, but it would be less efficient and less popular than our present trials. The way to improve machines is to confront them with tasks which tax both man and machine to the uttermost. In time these trials will evolve machines which will rise superior to any inefficiency on the part of the jockey. Trials which do not test the men can only lead to stagnation.

The Amount of Entry Fees.

Lastly, it is asserted that the A.C.U. charges too high an entry fee to the private owner. These fees could be, perhaps would be, reduced to-morrow if one of two things happened. A reduction would be possible if it led to an increase of entries, or if the number of subscribing members were vastly increased. Practical experiments have proved that the reduction of private owner entry fees does not increase the number of entries, which continues fairly constant under any scale of fees. The sole result is that occasionally undesirable individuals compete under a lower scale, and both drive away the best type of private owner, and make it increasingly difficult to secure the men of high standing and character whose honorary services are essential to the efficient conduct of the events. Certain private owners desire to secure cheap meals, complicated organisation, and a gold medal at a total cost to the A.C.U. of perhaps £5 per entrant, in return for a dollar fee. Such gentry are cadgers, not sportsmen; and their proper place is in the queue at a pauper soup kitchen rather than in an A.C.U. trial.

H. V. Swift, who, riding a 2¾ h.p. Douglas, covered 2,025 miles in six days. (See Current Chat.)

CLUB NEWS



Northamptonshire M.C.C.

A speed-judging trial was held over a 17½ miles course on Saturday last. A heavy Kempshall tyre, presented by the Kempshall Tyre Co., was the first prize, and was won by C. T. Underwood (3½ h.p. Bradbury), error 18s.: 2, club medal. W. J. Moore (Matchless), 41s. slow; 3, D. Barratt (Triumph), 1m. 58s. fast.

Manchester Wednesday M.C.C.

In the very successful club hill-climb at Woodhead Hill on the 14th inst. the results on formula were: 1, Jack Smith (3½ h.p. T.T. Triumph); 2, J. W. Davenport (3½ h.p. Triumph); 3, E. V. Stevens (3½ h.p. Dot).

Any motor cyclist having Wednesday afternoons and living in or near Manchester is requested to communicate with Mr. E. V. Stevens, 100, High Street, Manchester.

Exeter and District M.C.C.

At the monthly general meeting the hon. secretary, Mr. A. M. C. Scott, owing to his pending departure from the district, tendered his resignation, and a resolution was carried unanimously that the best thanks of the members be conveyed to him for the able manner in which he had carried out his onerous duties. Mr. T. H. Birdsall, of the Exeter Garage Co., Paris Street, Exeter, was elected to the vacancy.

Coventry and Warwickshire M.C.

A twelve hours' reliability run to Bath and back *viâ* the Cotswold Hills will be held on Saturday, July 15th, for a silver cup and medals.

The route is *viâ* Warwick, Wellesbourne, Moreton-in-the-Marsh, Stow, Gloucester, Birdlip, Nailsworth, and Cold Aston. The arrangements at the turning point at Bath will be in the hands of Mr. H. W. Duret.

The trials hon. sec. is Mr. A. Elson, "Kilworth," Marlborough Road, Coventry.

Herts. County A.C. (Motor Cycle Section).

Arrangements are in the making for a competition in Ireland, some time during August, with headquarters at Belfast. The visit will extend to about four or five days, and among those who are going are: Messrs. H. Lister Cooper, W. G. S. Carter, W. E. A. Colling, F. A. Hardy, C. M. Down, W. Cooper, Victor Wilberforce, and C. C. Cooke. It is probable that the Bradford M.C.C. will take part in the August Kendal tour this year, which will be extended to Alston (the highest market town in England). A novelty of the competition will be a class for light four-wheelers.

Newcastle M.C.

A successful all day run was held on Friday in the annual reliability trials from Newcastle-on-Tyne to Dunbar and back, a distance of 180 miles, the weather being fine and the roads good. Of the prizes offered for competition the Arthur Lucas challenge bowl was the principal trophy, and seventeen out of the twenty odd starters qualified for prizes or medals on the time limit, but the actual results will not be declared until the times have been officially worked out.

Messrs. S. Oliphant, T. W. Wilson, Arthur J. Lucas, A. L. Armstrong, and William Dunn, the hon. sec., were the officials, and the starters on motor cycles were as follows: T. W. Hilton (3½ h.p. Bradbury). W. H. Peel (5 h.p. Peel-Jap and sidecar), J. C. Bennett (5 h.p. Matchless and sidecar), W. Atkinson (8 h.p. Peel-Jap and sidecar), W. F. McCullagh (3½ h.p. Scott and sidecar), G. C. Irwin (3½ h.p. Dene), J. Osborne Morgan (2⅝ h.p. Royal Enfield), John Burn (3½ h.p. Dene), J. S. Rees (3½ h.p. Triumph), J. Adams (3½ h.p. Rover), O. E. Slater (4¼ h.p. Dene), E. Evison (3½ h.p. Singer). A. Clarke (3½ h.p. Dene), J. H. Wood (3½ h.p. Dene). B. Cooper (3½ h.p. Premier), D. J. Wright (3½ h.p. Matchless-Jap), and W. Appleby (3½ h.p. Dene).

Victoria (N.S.W.) M.C.C.

In the annual 100 miles road race, held early in May, two records were broken, H. Jenkins (3½ h.p. T.T. Triumph) covering the distance in 2h. 11m. 50s., and C. R. Cooke on the same type of machine broke the fifty miles record by doing that distance in 1h. 3m. 26s.

On May 13th there were over sixty entrants for the hill-climb at Geelong, of whom J. Stooke (3½ h.p. Premier) proved to be the winner, the second and third being H. Hurst (3½ h.p. Brown) and E. Taylor (3½ h.p. Triumph).

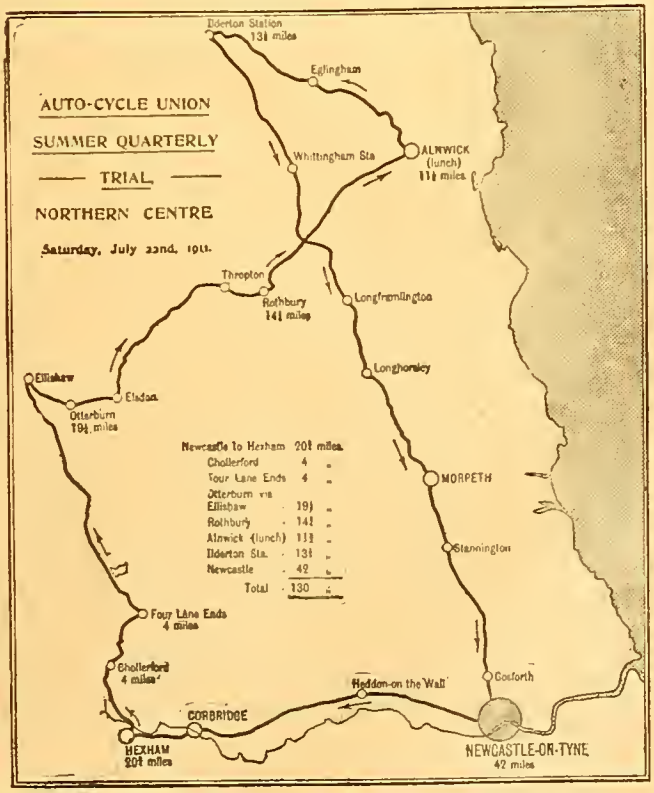
The Amateur Sports Club, with which the V.M.C.C. is affiliated), is now building a track at Melbourne capable of holding a speed of 70-75 m.p.h. It is expected to be ready in August, and has resulted in several orders being placed for track machines.

Bishop Auckland, Darlington, and District M.C.

The results of the hill-climbs held on Quarrington Hill have been worked out as follows.

SINGLE-CYLINDER CLASS.

Rider and machine.	Position on time.	Position on formula.
C. W. Smith (3½ h.p. Zenith) ...	1	1
H. B. Dicker (3½ h.p. Ariel) ...	2	2
C. Bone (3½ h.p. Ariel)	3	3
T.T. CLASS UP TO 500 C.C.		
J. P. Forster (3½ h.p. Triumph) ...	2	1
C. W. Smith (3½ h.p. Ariel) ...	1	2
C. Bone (3½ h.p. Ariel)	3	3
TWINS UP TO 1,000 C.C.		
H. Mason (5 h.p. Matchless) ...	1	1
E. V. Firth (7 h.p. Rex de Luxe) ...	2	2



Club News.—

Essex M.C.

Owing to lack of entries for the 200 miles trial fixed for June 24th the committee have postponed it to a later date, due notice of which will be given to entrants and members.

Cathcart District M.C.C.

A new motor cycle club has been now formed in the Cathcart district, Glasgow, called the Cathcart District Motor Cycle Club. This club first originated a few weeks ago, and the membership is gradually increasing. Motor cyclists in this district desiring information regarding membership are requested to communicate with the hon. secretary, S. R. Gibson, 9, Merrylea Road, Newlands.

Walthamstow M.C.

A silver cup is being presented to every competitor who succeeds in riding from London to Norwich and back, 200 miles, in twelve hours, adhering strictly to schedule time and checking in at prearranged places. The competition is open until October 1st, and competitors can choose their own time, provided they give the necessary four days' notice.

Two valuable silver cups are to be competed for next month, of which particulars may be obtained from the secretary, T. W. Percival, 13, Church Hill, Walthamstow.

M.C.U.I. (Ulster Centre).

The open speed trials at Magilligan on Saturday last marked a most successful innovation. The events included a five miles scratch for engines of 750 c.c., and a ten miles and fifty miles handicap.

In the five miles the results were: 1st, J. R. Thompson (3½ h.p. B.S.A.), 5m. 23⅕s.; 2nd, A. Kirk (3½ h.p. T.T. Triumph), 5m. 29s.; 3rd, C. R. Martin (3½ h.p T.T. Triumph), 5m. 32s.

In the ten miles handicap Messrs. Kirk and Thompson again accounted for all comers, though Kirk was first and Thompson second, and J. Stewart (3½ h.p. T.T. Triumph) third.

The fifty miles handicap provided some thrilling racing and a severe test for all the machines. Eighteen started, of whom nine had to retire at intervals for various minor mishaps. The final placings were: 1st, W. J. Chambers (3½ h.p. B.S.A.), handicap 1m. 10s., time 71m. 2⅖s.; 2nd, J. Lavery (3½ h.p. T.T. Triumph), handicap 3m. 30s., time 77m. 10⅘s.; 3rd, L. M. Kisach (3½ h.p. T.T. Triumph), handicap 2m. 30s., time 77m. 53s.

Saturday's speed trials of the Motor Cycle Union of Ireland (Ulster Centre) at Magilligan.

Cambridgeshire M.C.C.

The awards in the President's Cup Competition held on the 22nd are: 1, H. S. Wallis (3½ h.p. Bradbury) lost one mark; 2, A. B. Hurry (3½ h.p. Triumph) lost four marks. B th competitors made non-stop runs.

Worcestershire M.C.C.

On July 2nd will be run the 150 miles reliability trial for the President's cup, and in view of the many applications received from men residing outside the proposed ten miles radius, who are desirous of competing, it has been decided to extend the radius to fifteen miles, which will include the towns of Kidderminster, Evesham, Tewkesbury, Droitwich, Bromsgrove, Stourport, Malvern, Bromyard, Ledbury, etc. Full particulars will be sent on receipt of membership (for one day) and entrance fees, 1s. and 2s. 6d., by the hon. sec., Mr. Ernest W. Cook, The Foregate Press, Worcester.

Members who attended the opening run of the Cathcart District M.C.C. (Glasgow).

Dundee and District M.C.C.

A pair of Kempshall non-skid covers kindly presented by the Kempshall Tyre Co. will be the award in the petrol consumption test on Saturday next at the five roads circuit, St. Fort. A record entry is expected, as all machines compete in one class.

Lincolnshire A.C. (Motor Cycle Section).

It has been decided to hold a hill-climb on July 8th on Walesby Hill, about two miles from Market Rasen, commencing at 3.30 punctually. Entrance fees and the entry forms, which will be ready shortly, must be sent in early to the hon. secretary, the Union of London and Smith's Bank, Ltd., at Market Rasen, as the lists will close definitely after first post on Thursday, the 6th prox.

Taunton and District M.C.C.

The committee has arranged a hill-climbing competition for Thursday, July 13th, a speed-judging competition for Thursday, August 17th, and a 100 miles reliability trial for Thursday, September 14th, for which latter event the president of the club, Col. D. F. Boles, has presented a silver challenge cup.

West Essex A.C.

The competition for the M.C. cup has been fixed for July 16th, and takes the form of a reliability run to Clacton-on-Sea. Also Miss Dendy's cup will be competed for on July 29th, covering the Chelmsford and Ongar circuit for speed-judging. Full particulars will reach members in due course.

Mersey M.C.

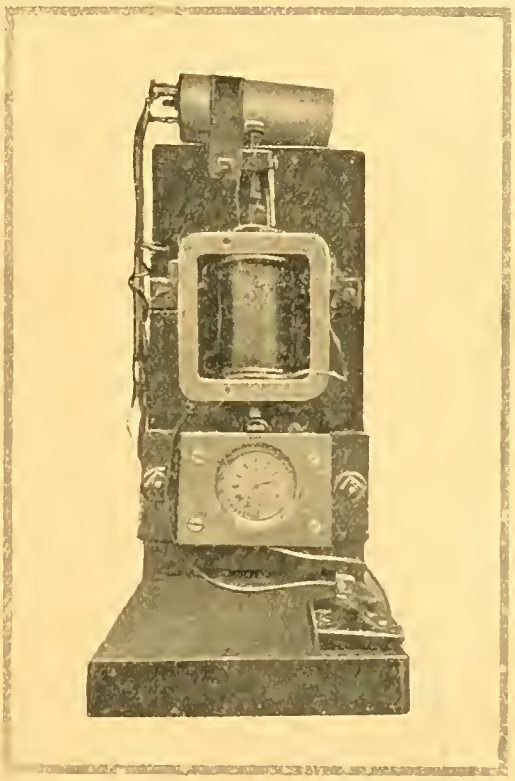
There are some good fixtures arranged for July. On the 9th a non-stop run of 100 miles from Birkenhead to Llandudno and back is to take place.

On the 15th and 16th there will be a twenty-four hours' reliability trial from Liverpool to Newcastle, *viâ* Kendal and Carlisle, returning *viâ* Harrogate, Clitheroe, and Preston. Gold and silver medals will be awarded as prizes. Motor cyclists interested should communicate early with F. Rees, 79, Lime Street, Liverpool

THE PROBLEM OF TIMING SPEED EVENTS.

THE AWARD IN OUR RECENT COMPETITION.

IN the issue of March 30th last we offered, on behalf of the Northern League, a prize of £1 1s. for the best solution of the problem of timing speed events, realising that hand timing by stop watches is subject to errors. It was with the object of eliminating as far as possible the personal element in timing that we doubled the Northern League offer, and the large number of replies which have been received prove conclusively the interest in the subject. After carefully going through the heap of replies, some of which we have already referred to briefly, we selected eight for further consideration, and of these we deem the contribution of Mr. R. H. Williams, of Great Yarmouth, the best. Mr. Williams describes his electrical timing scheme very clearly and to the point, also illustrates, and gives evidence of the apparatus having worked successfully. In this system the human element is entirely eliminated, and whatever error there may be in the scheme is common to every machine. The system, of course, would be rather cumbrous, except for short distances, such as hill-climbs and circuit events, where the starting and winning tapes coincide. We publish Mr. Williams's letter and contribution *in toto*:



Showing the electric magnet working the stop watch. The relay is at the top.

"135, Newmarket Road,
"Norwich, April 20th.

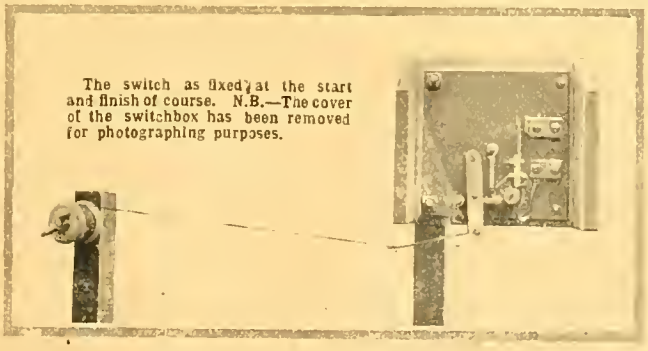
"Dear Sir, — I enclose a description, photographs, and particulars of my electrical timing apparatus for the solution of the problem of timing speed events. I may say that the Norfolk Motor Cycle Club (formerly the Great Yarmouth and District M.C.C.) have one of my sets of apparatus, which they use for their race meetings over a mile course, and also for their hill-climbs, with perfect success and satisfaction. — I remain, yours faithfully,

"R. H. WILLIAMS."

"AN ELECTRICAL TIMING APPARATUS FOR SPEED EVENTS AND HILL-CLIMBS.

"The apparatus consists of a stop watch worked by an electric magnet, as seen in the accompanying photograph. At the starting point a switch is placed on one side of the road, and on the other side is a stake with a reel of fine cotton fixed to it, as shown in the smaller photograph. The cotton is stretched across the road about a foot from the ground, the end being attached to the switch.

The operation is as follows: When a motor cycle comes into contact with the cotton it gives a slight pull, which is sufficient to work the switch, after which the cotton breaks. There is a switch at each end of the course. The first switch works the magnet which starts the watch, and the switch at the finish operates the magnet through a relay seen above the magnet and stops the watch. A mile of twin wire, or whatever length may be required, connects the switch at the finish with the magnet at the start. The whole apparatus can easily be set up in an hour and a half by three men for a mile course, and about the same time, or rather less, to take it up again, the wire being mounted on a drum on wheels. Two four-volt 12-amp. hour accumulators are required to supply the current. The price of the complete apparatus would be about £20." Mr. A. H. Walker (Hull) has sent us details of a very similar scheme, but it is not so well described or worked out as the winner's, and Mr. Walker does not give any instance of its having operated satisfactorily. Dr. Selby Clare sends details of an electrical timing apparatus, which is very like the Brooklands method, but in our opinion the system is too cumbrous and complicated for outdoor work on the roadside. Mr. Gossland, jun., and Mr. T. G. Brough.—After putting down elaborate apparatus for signalling the start and finish, these competitors introduce the chances of human error by the fact that the timing watch is struck by a timekeeper to the sound of the bells. Other competitors give suggestions which necessitate the carriage of the timing watch on the machine — an altogether undesirable and impracticable notion. To say nothing of the harm which would be done to a good watch, there is the objection of having to return it to the starting point, as it would not be reasonable to time competitors with different watches.



The switch as fixed at the start and finish of course. N.B.—The cover of the switchbox has been removed for photographing purposes.

Assembly at the opening run of the newly-formed Tunbridge Wells and District M.C.C. to Cranbrook.

Torbay and District M.C.C.

The open hill-climb takes place on Saturday, July 22nd, and full particulars and entry forms can be obtained from the secretary, A. Powell, 37, Fleet Street, Torquay.

Motor Cycling Club.

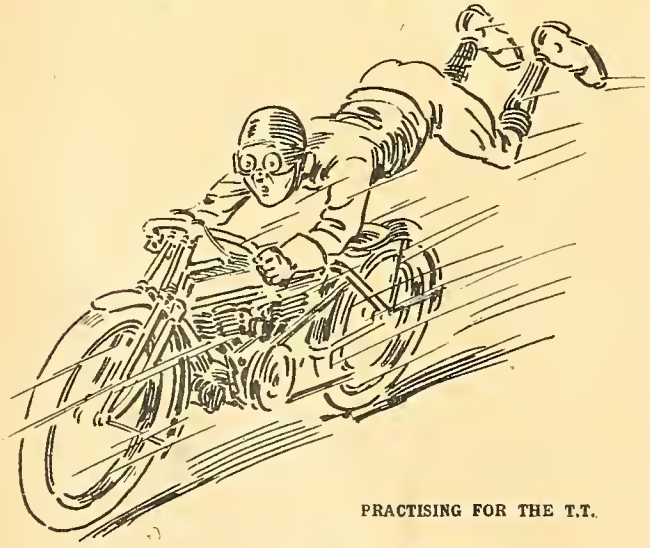
The Motor Cycling Club will hold its annual petrol consumption trial on Saturday, July 15th. Meet at the Hotel, True Lovers' Knot, Northwood. Weigh in at 4 p.m. Start at 5 p.m.

Ripon and District M.C.C.

The petrol consumption test, held on Friday, June 16th, brought ten entries, with results as follows: 1st, F. Topham (5 h.p. V.S. and sidecar); 2nd, N. Barker (3½ h.p. Rex); 3rd, W. Awmock (6 h.p. N.S.U.)

Tunbridge Wells and District M.C.C.

The opening run was held on Saturday, June 10th, to Cranbrook, and proved to be a great success. The club has started in a very promising fashion, and fills a long-felt want in a district covering a considerable area, members joining from Tonbridge, Marden, Cranbrook, Wateringbury, and even Sheerness. All those interested who desire particulars of membership should apply to the hon. sec., A. R. Courtenay, Hazelhurst, Frant, Tunbridge Wells.



PRACTISING FOR THE T.T.

A bit of a flier (down Snaefell).

Bradford M.C.C.

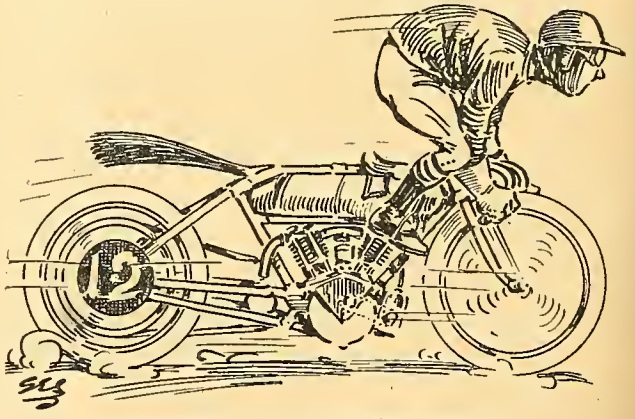
The following results of the 200 miles reliability trials, Bradford-Keswick and back, have been passed by the committee: 1st, J. N. Longfield (3½ h.p. Triumph), N.S.U. Cup and gold medal; 2nd, T. Bullus (3½ h.p. Phelon and Moore), silver medal; 3rd, C. Sidney (3½ h.p. Triumph), bronze medal. There were twenty-three competitors.

Surrey M.C.C.

The following is the result of the Exeter reliability trial held on the 14th and 15th insts. for the Triumph Challenge Cup: 1, J. H. Sparks (3½ Trump-Jap), error 70 seconds; Triumph Challenge Cup and Kempshall tyres. 2, G. Pine (3½ Triumph), error 75 seconds; gold medal. 3, C. E. Gammon (3½ Triumph), error 158 seconds; silver medal. Bronze medals won by H. Mitchell (3½ Humber), H. R. Owtram (3½ Triumph), J. Manners-Smith (3½ Triumph), C. J. Feeny (3½ Triumph), and G. S. Williams (3½ Arno). A petrol economy competition will be held on Wednesday, July 5th next, starting at 3 p.m.

Hampshire M.C.U.

In connection with the recently formed Hampshire Motor Cycle Union, a speed-judging competition was held at Ower, near Romsey, on the 14th inst., the arrangements for which were in the hands of the Southampton section of the Union. There was a good number of entries, competitors journeying from Bournemouth, Portsmouth, Southampton, and Winchester. The winner proved to be G. E. Eyston, of Bournemouth (3½ h.p. Triumph), 7s. too fast; 2, K. Dickson, of Southampton (5 h.p. V.S.), 47s. slow; 3, W. G. Styles, of Southampton (2¾ h.p. Scott), 4m. 9s. fast.



The jockey style. (A T.T. competitor's nightmare.)

Touring Tips.—

nate well below the top of the legging, and the whole provides the best combination I have ever tested. As the thigh overalls do not extend to the calf and ankle, they can be made so wide at the bottom end that there is no fear of ripping them when the boot is thrust through. Seatless leg-overalls are radically bad, as they afford no protection from a soaked saddle.

The Two-bag System of Luggage.

As regards luggage, riders continue to follow their own tastes. In a go-as-you-please tour, luggage has to be carried on the machine, and must be kept as small and light as possible. Personally, I ride to a fixed programme, and use the "two-bag" system. I possess two small telescopic bags or cases, made from some leather substitute, and obtainable at motor cycle shops. Each contains a complete outfit—pyjamas, celluloid collar, spare studs, safety razor, sponge, socks, etc.—and each morning one case is posted on ahead to the destination for the next night but one. Post is surer than rail, and cheaper. The sponge is always the most precious item. After a long day on the road nothing freshens up one's face and back-hair so nicely as a good sponging with cold water. By this plan the machine travels light, and climbs well, while I avoid trouble with festoons of straps and a pile of odd parcels and cases. Ladies should tie their heads in oiled silk bag-veils, or their heads will never feel comfortable.

Final Snips.

The rider who dreads side-slips should remember to lower his gear when he has to face a prolonged run on treacherous surfaces. He can average legal limit after screwing down his pulley to 5½ to 1, and with this gear he will find the tendency to skid vastly reduced. If the studs on the back cover are badly worn he should change the covers over before he leaves home. A studded retread can be procured very cheaply, and will wear very well on the front wheel, whereas it might give trouble on the driving wheel unless securely vulcanised. The machine will probably not be cleaned regularly on tour, and it will save much trouble if all the metallic interstices are painted over with a brush dipped in hub lubricant or vaseline thinned out with paraffin. It makes the machine look disgusting on starting out, but after 100 miles it looks no worse than it would have done in any case, and on returning home a mop with a rag fetches off dirt and grease together, leaving no trace of rust beneath. If this precaution is ignored the machine will have to be cleaned at night whenever it runs through rain; if not, every chink and cranny will be full of rust. Finally, the wise tourist takes precautions against running out of petrol. The cheapest plan is to use a three-way tap, which can be bought and fitted to existing tanks for a shilling or two. With the tap in the second position a quart or so of petrol remains in the tank when the engine stops, and the reserve can be drawn on by turning the tap to the third position. All makers will fit some device of the kind as a standard next year. One make of machine has a small partition rising an inch from the floor of the tank. When the engine stops one dismounts and lifts the front of the machine so that the petrol trapped behind the partition runs over to the feed pipe.

A TALE.

Juvenis Algy's motor-bike
Had equus power of septem.
In colour 'twas a rufus hue;
And as for hills—it leapt 'em.

In pensive mood perambulans,
Percepit limit—"Decem,"
Then shoved a pump, connected to
His cylinders, to grease 'em.

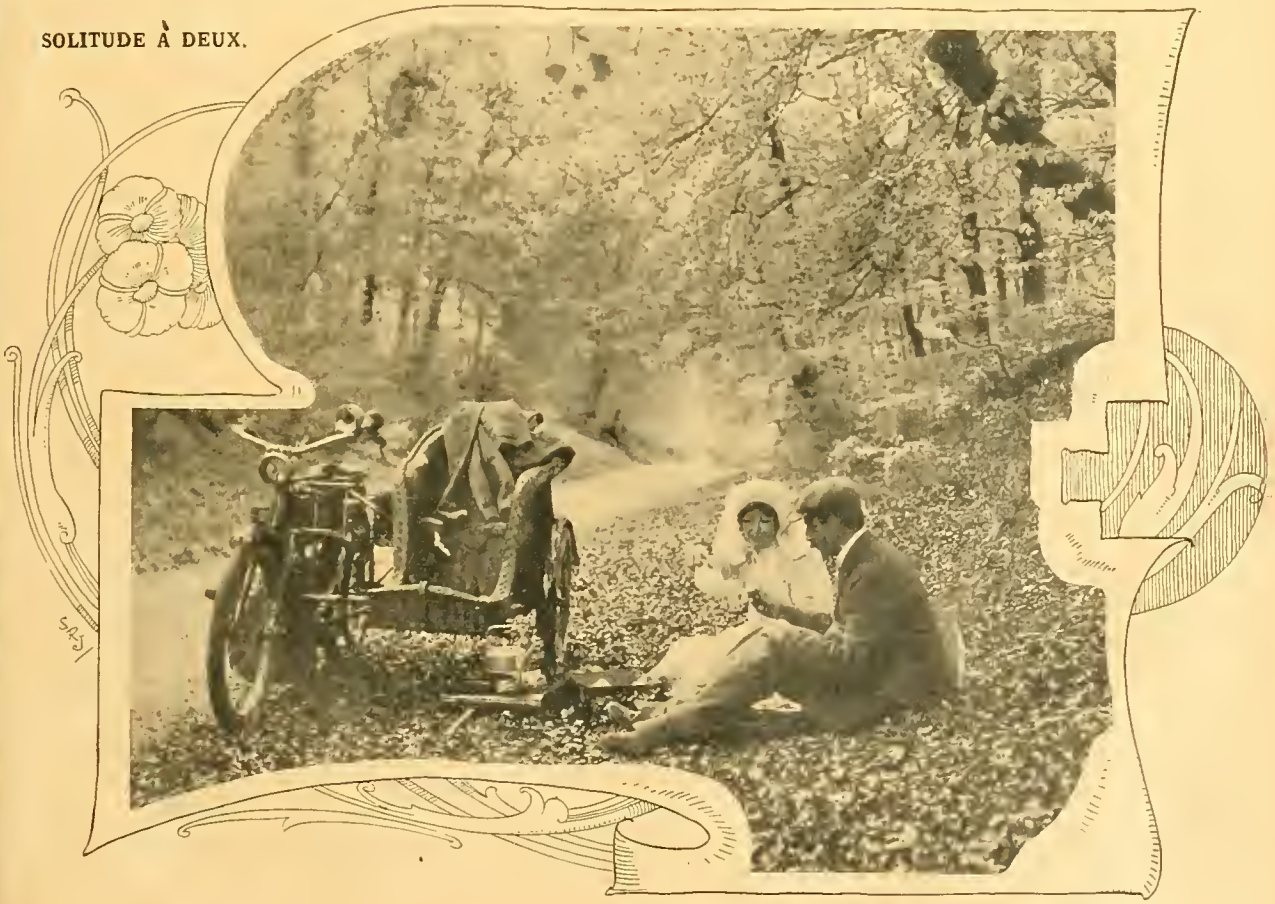
By now he'd reached a praeceps hill,
Proclivitatis shocking,
Discovered, consternatio,
His machina was knocking.

Then scintillam retardavit,
Rededit "L.P.A."
Infirme, turned his currus round,
Pergavit t'other way.

The causa for the clamor
Emissus by his motor,
Was that proportio magna was,
Between id et his rota.

Moralis of this parvus talis,
Is nunquam gear for velox.
Praeterquam bike armatur cum
Efficienti gear box.

SOLITUDE À DEUX.



LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, E.C., and should be accompanied by the writer's full name and address.

Dangerous Tramlines.

[5696.]—We should like to call your attention to the very dangerous state of the L.C.C. tramlines, especially at the points. One of our staff, who does a great deal of riding for us with a view to testing accessories, has drawn our attention to the subject, as he has had several accidents from this cause lately, in spite of being a rider of many years' experience and well accustomed to traffic.

We invite any of your readers who have had accidents from this cause to communicate with us, giving time and place of accident, with a view to preparing a list to submit to the Local Government Board, to see if they can compel the L.C.C. to carry out these much-needed repairs.

BOWEN AND ODERY MFG. CO.

Is a New Formula Wanted?

[5697.]—There seems to be an opinion of late as to the adaptability of the A.C.U. formula to the lightweight and heavyweight motor cycles, but, to my mind, this outcry of the heavyweight champions is one-sided indeed. After being satisfied with the formula for a number of years, they suddenly decry it, because in some cases of late the heavyweight has been outclassed by the lightweight in the same events. They do not stop to consider that the lightweight of to-day is quite a different machine from that of twelve months ago, and because the design and efficiency of these machines have been so improved as to become a dangerous opponent, the heavyweight champions then blame the formula, which for so many years has satisfied them.

It is pointed out that the formula favours the lightweight and a heavy rider. Well, supposing this does happen, surely if the small engine fitted to these machines can be loaded with heavy riders to such an extent as to make no appreciable difference, more credit to them, and if they do gain a success under such conditions, do they not deserve it? For example, let us take a machine of 200 c.c. It climbs a hill in 74s., and weighs 260 lbs. By the A.C.U. formula, $\frac{C \times T}{W}$, we get 57.9. A heavyweight machine of 500 c.c. climbs the same hill in 56s., weight 353 lbs. This, worked out by the same formula, gives 78.4. According to formula the lightweight wins, and rightly too, when we consider that the heavyweight has over twice the h.p. and only 93 lbs. more weight, but climbing the hill 18s. only faster than the lightweight machine.

Now look at the successes of one well-known firm's lightweight this season, and these successes have not all been attained with the A.C.U. formula, and again take one of the same firm's riders. He himself is a lightweight, but, in spite of what some riders say about light machines and heavy riders, he has gained his full share of the successes.

Does not this go to prove that the A.C.U. formula is an equitable one, and that if the heavyweights fail to show up well against the lightweight the cause should be looked for in some other direction than trying to take from the champions of the lightweight the success that is due to them for producing an engine so wonderfully efficient for its capacity?

Another point greatly in its favour from a competitions point of view is that the result can be worked out on the spot, and the results known at the close of the meeting. If we have another formula which is so complicated that the results have to be worked out after the meeting, and the result known a week hence, all interest will have been lost.

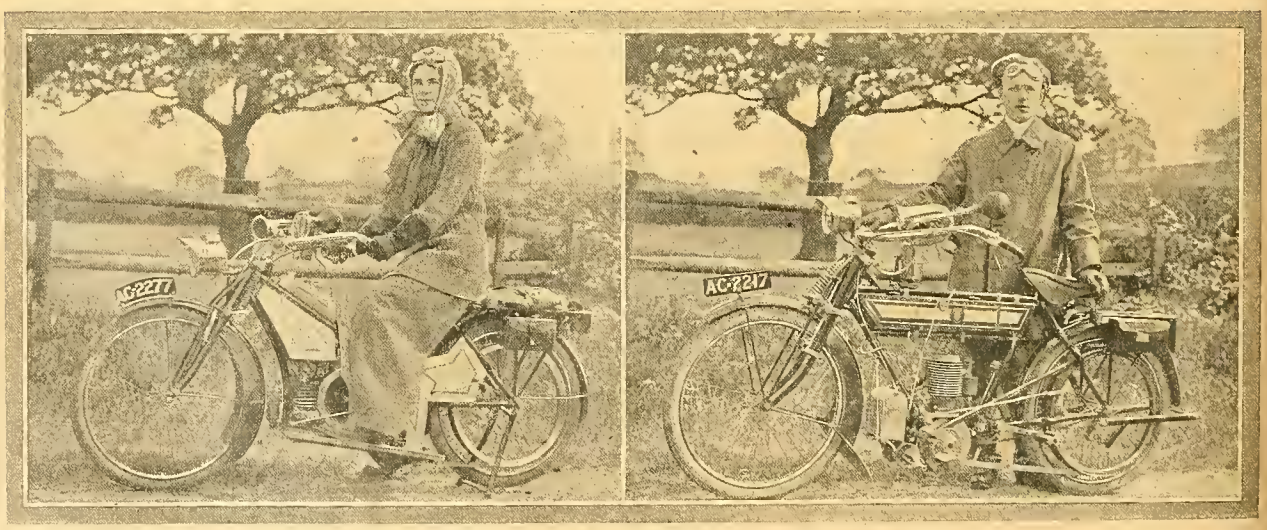
LESLIE M. LANE.

Change-speed Gears and Sidecars.

[5698.]—I was very surprised to read the letter from "Never Again" [No. 5676] giving his sidecar experiences. Will you permit me to give mine?

I have a two-speed 3½ h.p. Humber motor cycle with a locally made £6 6s. rigid sidecar attached, and during Whit-

MARRIED COUPLES WHO MOTOR CYCLE.



Mr. and Mrs. Atkinson of Aston, Birmingham. The machines are a Douglas and a B.S.A.

week alone rode over 600 miles on not always the best of roads. I am fond of hilly country, and only once had to drop my passenger, and that was through bad driving on Cromford Hill, Derbyshire. I am highly delighted with my "turn-out," and would not exchange it for any other combination on the market (the total cost was only about £67). The weight of the bicycle is about 240 lbs., and I suppose the sidecar will be about 75 lbs., myself and passenger add 266 lbs., making a total of 5 cwts. 21 lbs. Previous to my present mount I had a 3½ h.p. a.o.i.v. Quadrant with a Roc conversion set fitted, also a sidecar, and never experienced trouble in any shape or form. Maybe I'm lucky, but I think it is the result of "care."

Does not "Never Again's" trouble with the "balls wearing into the spindle" point to under-lubrication? I am pretty generous in this respect, preferring a three minutes' stop on the road for a sooted plug to a breakdown and train journey home. Tyres on my machine wear very well. The engine starts with two turns of the handle, and runs about 60-70 miles per gallon of petrol. I have nothing but praise for the external band brake as fitted by Humbers'. N 5529.

[5699.]—May I, as a contented user of a heavy two-speeder with sidecar, reply to "Never Again's" letter in your issue of the 15th. "Never Again" has been unfortunate, but he should not condemn the type on that account.

My experiences have been quite different. Machine 7 h.p., J.A.P. engine, pulley shaft, epicyclic two-speed gear, Whittle belt drive. On the road early in 1909. Fitted Chater-Lea rigid sidecar middle of last season. Mileage to date 14,000, including 8,000 with sidecar.

As to repairs to gear, I have had one new pinion and some half dozen ball races, all of which were replaced quietly at home during the annual overhaul. At present the gear lever quadrant is worn and will have to be replaced soon. That mine is not a purely church parade machine is amply demonstrated by the long-distance trials in which it has competed, and picked up its share of awards, from the London-Plymouth in 1909 to the last London-Edinburgh, with all sorts and conditions of competitions in between. My belt (1in. Whittle) was not touched during the 800 miles between London and Edinburgh and home again. "Never Again" touches a real sore spot when he mentions the expense of tyres with this type of machine.

I have never had an acrobat as passenger, and rather think that for all ordinary riding I should not care about it, but new experiences are always interesting, so perhaps someone will oblige. £110 for an outfit is quite beyond me, so I must consider mine cheap at £70 odd.

G. O. K. THOMAS.

[5700.]—Please excuse my troubling you, but I feel bound to reply to "Never Again," who wrote a grumble *re* change-speed gears and sidecars.

My experience has been quite the opposite to his. Some three months ago I bought a 7 h.p. Indian with two-speed gear and free engine, and a Millford rigid sidecar, which has given my wife and myself, as well as two of my boys, any amount of pleasure and satisfaction.

I have to confess that at the first only I had some little trouble with the clutch, to which I had to do a good deal of adjusting, but now that I have ridden the machine for three months I put that trouble down to absolute inexperience, never having had a motor cycle before, and had I known then as much as I know now, I would not have had even that trouble.

I have already ridden 3,500 miles, and that over some of the heaviest roads in Northumberland, such as the Carter Fell, the extremely heavy bad roads between Newcastle and Rothbury, *viâ* Scots Gap, to say nothing of fairly heavy climbs like Hartside on the road to Penrith, although I went up with four passengers on top gear all the way from Alston, and very easily on second gear back from Melmerby.

I and my wife and two boys, one aged six the other eleven, tour regularly, and carry a luggage case and a two-gallon tin of petrol, too, and we have no trouble whatever. We have any amount of power, and the machine works like a motor car. W. B. ELLIS.

[5701.]—We are not surprised to notice "Never Again's" disastrous experiences with the ultra-heavy high power and expensive sidecar outfit in a recent issue of *The Motor Cycle*.

The attempt to turn the light, cheap, and handy motor cycle into a species of mongrel light car will fail again in the case of sidecars and quadcars, in the same dismal way that it failed in the case of tricars.

We have backed up this opinion by offering the trade an enlarged and strengthened type of the well-known three-speed motor cycle gear. This larger gear has been thoroughly tested, and is amply strong enough for any combination with engines of 3½ h.p. A clutch alone with a single fixed gear is practically useless for restarting a double load up hill, and the unfortunate rider is faced with the humiliating alternatives of going down again to get a flying start, endeavouring to push off single-handed, or else asking his passenger to get out and help him, and then to execute a flying leap into the sidecar after the machine is under way.

We venture to assert that the advent of this really efficient three-speed gear and free engine clutch will revolutionise the capabilities of the 3½ h.p. single and sidecar in the same way that it has enabled the motor cycle of moderate power and weight to tackle the worst hills with ease and certainty.

THE ARMSTRONG TRIPLEX THREE-SPEED CO., LTD.
J. H. PRICE, Managing Director.

Great Reforms in the Scottish Six Days' Trials.

[5701.]—In your issue of the 15th inst. I notice a letter from Mr. W. Pratt regarding Scottish six days' trials. He wishes the trials made more severe, but, judging by the way the competitors climbed Amulree last year, I think they had more than enough.

As regards the hill-climbs, he says: "The machine which will go up a hill like Amulree at a slow speed is the machine which is more likely to appeal to the touring rider than the machine which flies up hills like those met with in Scotland at well over the legal limit."

Well, I suppose I have seen as many riders go up Amulree as most motor cyclists, having been a spectator at the six days' trials and also at several open hill-climbs, and I fail to see where Mr. Pratt finds them going up at well over the speed limit: most of them are lucky if they reach the top at all.

There is certainly one rider (Mr. James Adamson, of Perth) who can tackle it at speed limit, and it might interest Mr. Pratt and others to know that he made a clean ascent with heavy passenger on carrier immediately the trials' riders were over. His mount was his ordinary T.T. Triumph. This is certainly a performance which few (if any) 3½ h.p. two-speeders could accomplish.

The competitors in last year's trials were certainly never near the legal limit, and I suppose they tried their best.

The 3½ h.p. water-cooled Rex to be ridden by R. Lord in the Senior T.T. A. H. Alexander will ride a similar mount. The performances of this new model will be watched with interest. In practice it has proved very fast and a powerful hill-climber.

While I am on the subject of hill-climbing, and being now in Yorkshire, might I say that I have climbed most of the famous test hills here, and the other day attempted Staxton Brow with its 2¾ gradient. My machine (a 3½ h.p. two-speed Humber) took me up until my crank case stuck on the famous hump. I think this would be an ideal hill on which to hold a hill-climb, as the hill is straight, the surface fair, and the gradient would be a good test of the motor cycle and also of its crank case clearance.

Hoping the English trade will support the Scottish six days' trials more than ever, as it is one of the best tests to which a motor cycle can be put, TS 345.

Nail Catchers and Damage to Tyres.

[5702.]—On getting home after a recent journey, I found a cut right round my tyre, in one or two places $\frac{3}{16}$in. deep, undoubtedly caused by a nail or piece of wire getting fixed between nail catcher and mudguard. It would be interesting to hear if other riders have experienced anything of the same nature.

After damage to cover was discovered, I removed the catcher, and have had two punctures in about two hundred miles; with catcher on I drove my present mount between four and five thousand miles without a single puncture in the back wheel. R. H. ADAMS.

Insurance.

[5703.]—I note in your issue of the 15th inst. that "Adsum" in letter 5665 states the ordinary motor cycle insurance policy is nullified in the event of an accident whilst carrying a passenger on the carrier of the motor cycle insured. It is evident from the tone of this letter that your correspondent has been insured with some company who put in a very peculiar clause, and I can at once assure him and all other motor cyclists insured under the Auto Cycle Union insurance scheme, that no such condition appears in the policy, and the benefits would apply if an accident did occur when a passenger was being carried on the carrier. A. H. PRIESTLEY.

Petrol Supplies in the Isle of Man.

[5704.]—Upon previous visits with my motor cycle to the Isle of Man T.T. Races, I have, in company with others, experienced much difficulty in obtaining petrol after disembarking from the steamer, both at Douglas as well as at Liverpool.

The midnight boats, which arrive at Douglas on June 30th and July 3rd between 5 and 6 in the morning, should be met by some enterprising Manxman, and I for one would prefer to pay extra for my petrol rather than trundle a heavyweight motor cycle in search of an early rising dealer.

This same enterprising Manxman would be welcome to the contents of my tank just previous to embarking upon the return steamer. Perhaps some one in Liverpool will emulate the Manxman's example, so that we shall not be forced to depend upon the "Mersey of Neptune" to care for our wasted petrol. H. W. TURNER.

Stolen Machines. A Suggestion.

[5705.]—I am glad to see that Mr. White has recovered his motor bicycle, notice of the theft of which you published. I venture to send you an idea which has occurred to me, and which, if the makers would put it into practice, would, I believe, put a stop to these thefts, or at any rate increase the chances of discovery. At present the number of the engine is stamped on in small figures, and it is the easiest thing in the world to alter or obliterate them.

Now if the makers would have the number of each engine cast in large figures on the crank case it would be impossible to alter them, and as I suppose that ninety-nine out of a hundred motor cyclists either take in your paper or see it at their clubs, the publication of the theft, giving the name of make and number, would make it extremely difficult for the thief to keep the machine for his own use or dispose of it, especially if the A.C.U. or A.A. and M.U. could be induced to notify all dealers and known repair shops. ALEX. BEGBIE.

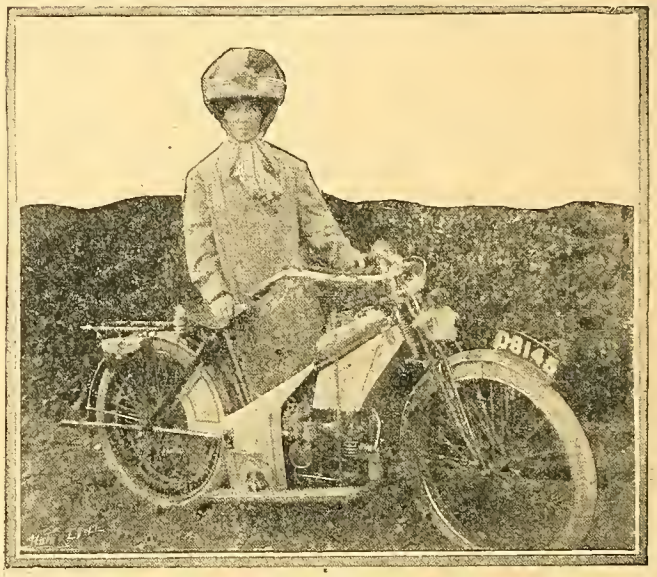
[Our correspondent has evidently overlooked the fact that his suggestion, if carried out, would necessitate an alteration to the pattern for every different number, which, of course, would result in a considerable increase in cost.—ED.]

A Lady Motor Cyclist's Experience.

[5706.]—I am enclosing herewith a photograph of myself and my 2¾ h.p. two-speed Douglas, which I think must be the very best lady's machine made.

I have never ridden a motor cycle before this one, and I find it perfect—no trouble at all.

My first run was about eighteen miles from Erdington to Stonebridge. My next run was about twenty miles. It was so fascinating that I thought it would be nice to have a run as far as North Wales. It was suggested by my son, who was riding a P.M.C. two-stroke, that we should go as far as Capel Curig, which I think is about 113 miles. I did this very comfortably, and felt as fresh when I arrived as if I had only ridden a few miles. My friends were very much surprised at my going such a long run, having had no experience. I only used my low gear once the whole of the way, and that was going through Shrewsbury. This was necessary, as the traffic was very heavy, being market day, but I soon got through and went sailing merrily along. All the hills the machine romped up. We went on to Corwen, stopped for lunch, which we enjoyed very much. We were soon on the road again, feeling quite fresh. The only thing that troubled us was the dust. We found the roads very rough, and many dangerous corners from Corwen to Capel



Mrs. A. Pilkington and her new two-speed Douglas

Curig. We stayed two days with our friends, and returned the third day. I do not think we ever enjoyed a holiday so much before. I was also very much surprised at the low consumption of petrol.

I think that if ladies knew how easy it is to manage a motor cycle, and the pleasure it is to ride one, many ladies would go in for motor cycling.

(MRS.) A. PILKINGTON.

SUMMARY OF CORRESPONDENCE.

If "B.M.I." will kindly send his name and address we will reply to his letter of the 19th inst.

Will the motor cyclist who lent a tyre lever to another rider on the Southport-Ormskirk Road on the evening of the 13th inst. kindly communicate with W. Webster, 52, Virginia Street, Southport?

NEXT WEEK!

A COMPLETE AND GRAPHIC

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SKETCHES AND PHOTOGRAPHS OF THE ACTUAL EVENTS.

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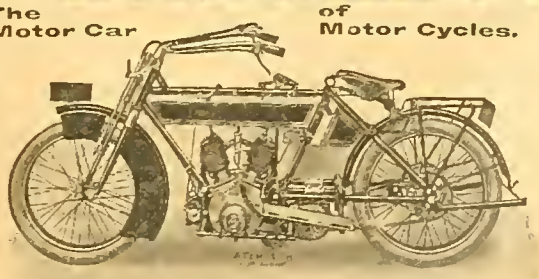

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specially designed footboards to all models. Rex registered design.
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system of timing gear, giving silence without loss of power.
patent automatic lubrication from crank case to piston head.
specially designed tanks, giving one-and-a-half gallons petrol supply.
automatic drip and push-pump lubrication
front wheel detached by simply withdrawing one bolt after removal of a single nut.
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patent side car steering, by which the side wheel steers in conjunction with the front wheel.

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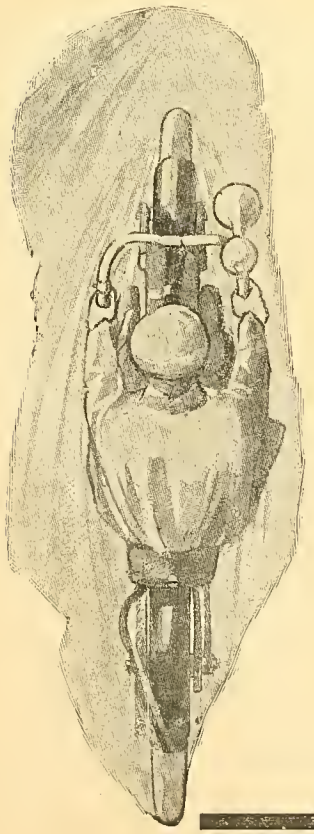

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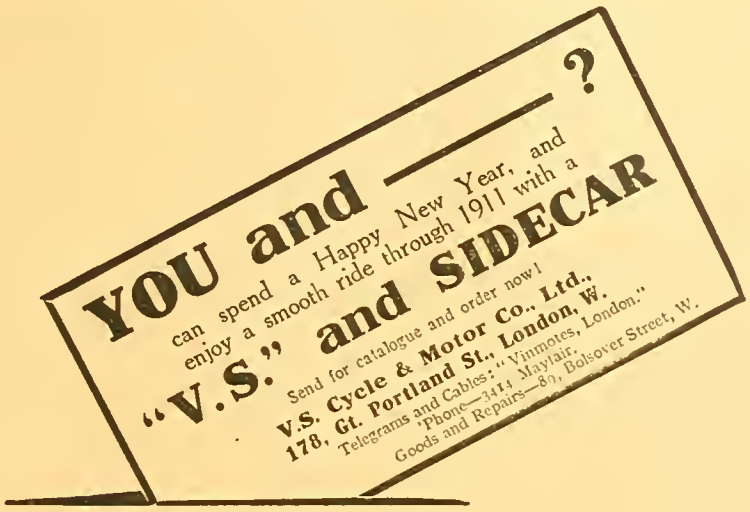
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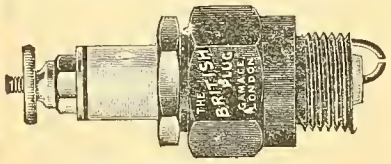

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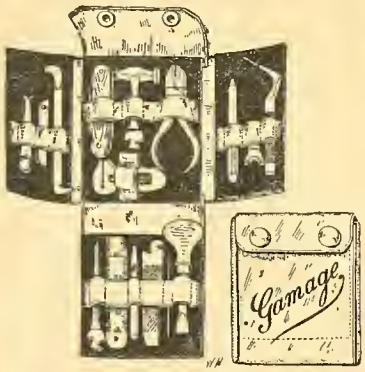

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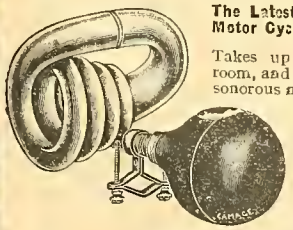

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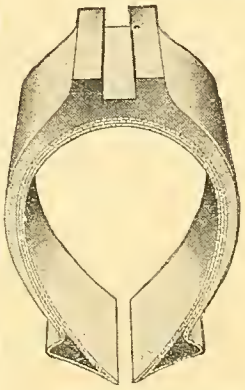
BEST MOTOR CYCLE TYRE YET MADE.

The 'GAMAGE'



New Model for 1911.

At present in 26in. × 2¼in. only.

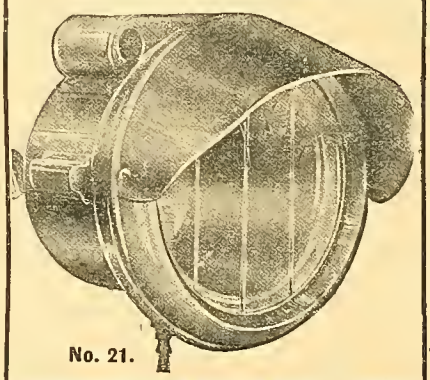
Also special 26 × 2¼in. to fit 2in. rim.

Price of Cover,

35/9

each.

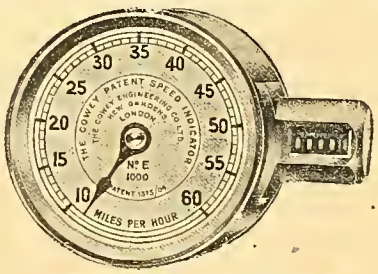
Extra heavy rubber and 3-ply canvas.



No. 21.

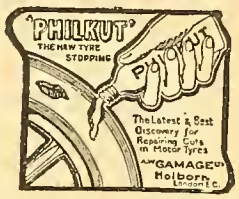
GAMAGE MOTOR CYCLE HEAD LAMP.

Fitted with Hood and genuine Mangin Lens Mirror. Splendid light-giver. Lamp only. Brass or Plated, 21/-.


THE COWEY PATENT SPEED INDICATOR
THE COWEY ENGINEERING CO. LTD.
NEW GARDEN ST. LONDON
No E 1000
PATENT 1315/04
MILES PER HOUR
10 15 20 25 30 35 40 45 50 55 60

THE COWEY MOTOR CYCLE SPEED INDICATOR.

Can be fitted to any machine, either spring or rigid forks. Will fit on either right or left-hand side. Will register up to 60 miles per hour, guaranteed. Price, with Odometer, £4 4s. When ordering, please give the following particulars: Name of machine, horse-power of machine, front wheel, whether spring or solid forks; if spring forks, name of make.



The Stopping That Stops.

'PHILKUT'

Only to be had from GAMAGES.

Small tube, 1/3
Large tube, 2/9

You can repair your tyres with "Philkut" anywhere—at any time. No electric current—no heat. Vulcanising cannot make a better job of it. In a few minutes "Philkut" becomes as tough as the tyre, and equally elastic. It actually becomes part of the tyre, and resists wear as well as the tyre itself. It will double the life of your tyres.

Gamage's Original 'Patchquick' Patches

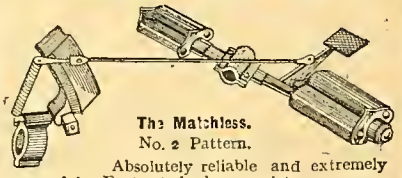
thoroughly amalgamate with the tyres, and will neither creep nor come off when the tyres get hot. They require no vulcaniser, are fixed in five minutes, and will expand when tyres are inflated. Patches, 2d., 4d., 6d., and 10d. each, according to size and shape. Beware of imitations: they may let you down.

Price 6d. and 1/- per tube. Repair Outfits, 3/-, 5/9, 10/6. Can be sent by post or rail.

Mr. Chas. Larrette, the famous writer, says: "'Patchquick' Patches are simply perfection."

Mr. Fred. W. Jane, in "The Motor," says: "I see someone else writes about inner tubes. One of my back ones has one nip and two punctures with 'PATCHQUICKS' on (road repairs), and holds air perfectly. The covers get very hot and that appears to vulcanise automatically. The article is entirely wrong, and done in the first place out of sheer necessity; but now I have done with vulcanising inner tubes till such time as I can do my own. Trusting vulcanising to the casual repairer is the most certain method of ruining tubes that I have yet come across."

FOOTREST AND BRAKE.



The Matchless.
No. 2 Pattern.

Absolutely reliable and extremely powerful. Footrest, brake complete.
Price £1 7 0 Footrests only, price 13/-
With 1⅛in. or 1¼in. clips.

"MATCHLESS" SPRING FORK ATTACHMENT.

Converts an old pattern motor cycle into an up-to-date luxurious motor. Thousands in use, giving every satisfaction.

Price 15/6
Postage 6d.

GAMAGES AND BENETFINKS

HOLBORN CHEAPSIDE

THE NEW PATENT

LODGE

"SELF-COOLING" PLUG

(Designed for Maximum Power).

BRITISH MADE.

Identical plugs to those used by Thomas Sopwith on his record Cross-Channel flight, Sunday, 18th December.

Excellent for use on all air-cooled engines, especially where overheating is experienced.

Can be obtained price 6/- each, post free, direct from the Makers—

LODGE BROS. & CO.
Dept. E,
New St., BIRMINGHAM.

STEADY AS A ROCK

Accurate as the Greenwich Time Ball.

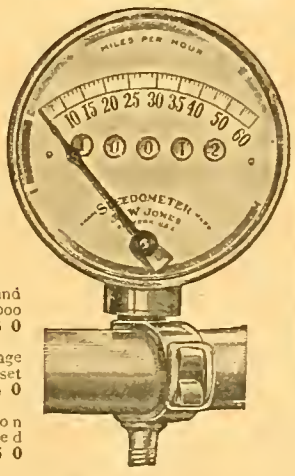
"JONES"

MOTOR CYCLE SPEEDOMETERS

are:

Unapproachable for

RELIABILITY, ACCURACY, AND GOOD SERVICE.



MODELS:

26. Speed to 60 m.p.h., and Season's Mileage to 10,000 miles £3 3 0

31. Includes also trip mileage and automatic reset £4 4 0

32. Above with addition of maximum speed hand £5 5 0

FULL PARTICULARS OF

MARKT & Co. (London), Ltd.,
6, City Road, LONDON, E.C.

♦ The oil that lubricates most. ♦

LONDON to EXETER and BACK.

M.C.C. 24 Hours' run

ON

Vacuum Mobiloil B

Copy of telegram received from Mr. F. A. McNab.

Liphook,
Vacuum Oil Co., Dec. 28th, 1910.
Caxton House,
Westminster.

Baker White and I both won Gold Medals M.C.C. 24 hours' trial on VACUUM OIL.

McNab.

VACUUM OIL Co., Ltd.,
Caxton House, Westminster, S.W.

THE *Premier*

3½ H.P. SINGLE CYLINDER MOTOR CYCLE

IN THE M.C.C. 24 HOURS' WINTER TRIAL

QUALIFIES FOR

GOLD MEDAL

MR. S. SAWER, OF SHEFFIELD, WHO RODE A STANDARD SINGLE CYLINDER PREMIER,

Telegraphed as follows:

"M.C.C. 24 HOURS' TRIAL LONDON TO EXETER AND BACK, GOT THROUGH TO TIME. PREMIER WITHSTOOD SEVERE CONDITIONS IN MOST SATISFACTORY MANNER, RAN SPLENDIDLY THROUGHOUT."

The machine referred to is a 1911 Model, fitted with improved auxiliary exhaust release.

WRITE US TO-DAY FOR PARTICULARS AND LIST.

THE PREMIER CYCLE CO., LTD., COVENTRY.

29, Holborn Viaduct, London, E.C.; 64, Holdenhurst Road, Bournemouth; and Hertford Street, Coventry.

"Out and Home."

That is the quality which distinguishes the

CALTHORPE
MOTOR BICYCLE

There are no "ifs" and "buts" about it—it is just "Out and Home."

Maybe you've experienced all the terrors of the machine that takes you out, and—leaves you there—

Not so with the Calthorpe—it takes you out, and brings you home, not once, but every time.

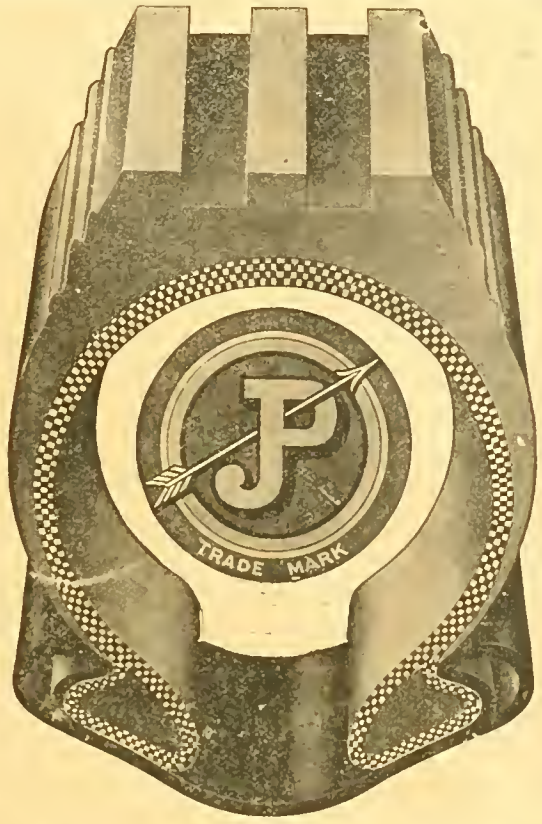
That is reliability, and it is that same reliability which has made its success ensured.

Note these details—

It is 3¾ h.p., is fitted with Bosch Magneto, Bowden control, Brown and Barlow Carburettor, Druid Spring Forks, and Standard Tyres.

Then ask for fuller particulars.

Calthorpe Motor Cycle Works, Barn Street, Birmingham.



Try this TIRE

and we promise, with every confidence, that you will be highly delighted with it.
—It's the new

"PEDLEY"

3-rib Motorcycle Tire

—the latest and most perfect Tire of to-day—is quite the riders' ideal in every respect—the outcome of scientific analysis of actual riding needs.
—It is not an exaggerated cycle tire, but a tire (and the only one) made on automobile lines—moulded to riding shape, which it always returns—having an abnormally thick non-skidding tread of tough "pure Para" rubber based with extra strong foundation, consisting of four plys special canvas with layer of rubber between each ply—thick walls—and correctly-shaped beaded edges which entirely eliminate "tube-nipping."
Standard Size 26in × 2¼in.

Price - - Covers only, 5/6 each.
Inner tubes, 1/9 each; extra heavy tubes, 1/9 each.
—These prices though higher than usual are the lowest at which it is possible to produce such "extra-quality" goods as PEDLEY's Covers and Tubes.

SPECIAL OFFER.
—To induce a trial of these Tires, and to enable us to keep a number of them under our observation, we are making 500 "Test Riders" a special gift of 1/- per tire. Fill up Coupon at foot and get particulars of this exceptional and valuable offer.

J. PEDLEY & SON, LTD., Gt. Charles St., Birmingham.

Cut along here.

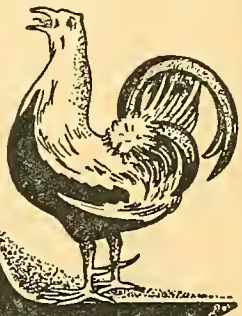
Messrs. J. Pedley & Son, Ltd., Tyre Manufacturers, Oxford Works, Great Charles Street, Birmingham.

Please forward me leaflet and particulars of your special "Test Riders" Scheme regarding your PEDLEY MOTOR CYCLE TIRE

NAME.....

ADDRESS.....

SOMETHING TO CROW ABOUT.



NOT AN OUNCE

of engine power wasted, side-slipping practically eliminated, petrol consumption brought to the lowest possible margin, a continuous grip all round the belt pulley, these are benefits to be derived from the

WATAWATA

THE BEST BRITISH MOTOR CYCLE BELT

due to its unique design and skilful construction of the best selected materials.

Write for Booklet B.

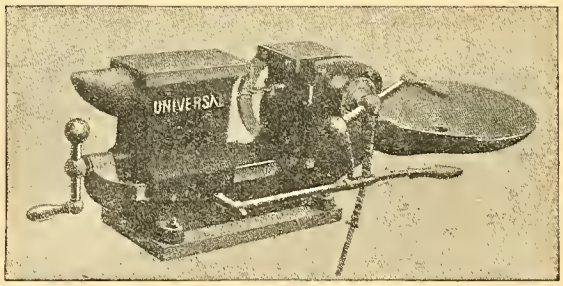
O. & W. ORMEROD, LTD., ROCHDALE

London: W. B. Brooke, 16a, British Grove, Hammersmith, W.

THE UNIVERSAL

Blow Forge.
Anvil.
Beak.
Cutter.

Price **£11 11s.**
Patent Lever Attachment, **15/-** extra.



Vice.
Tube Vice.
Drill.
Emery Wheel.

Measurement—Length, 4ft.
Height, 11in.
Total Weight, 160lbs.

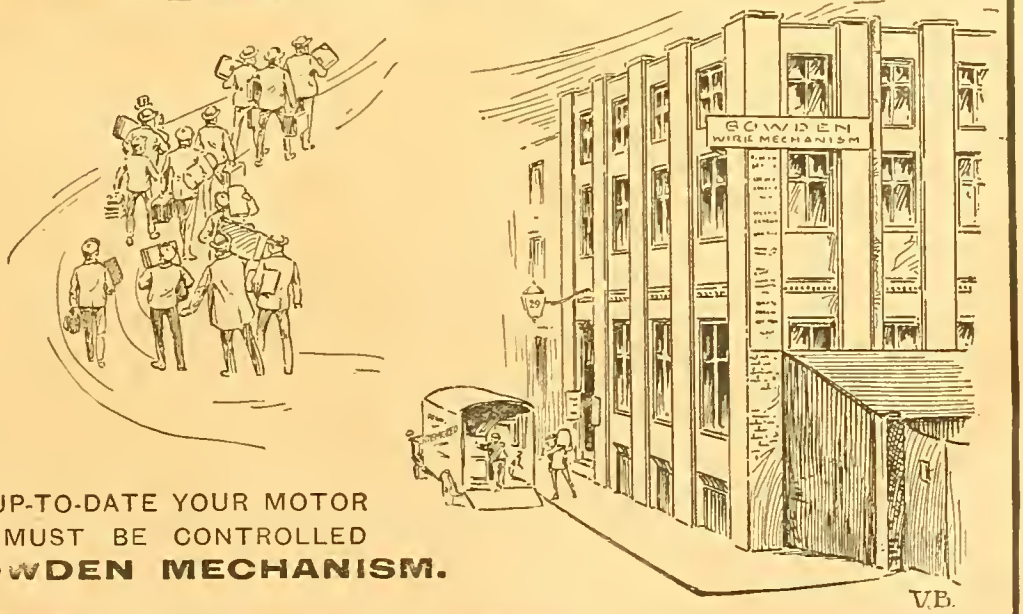
SOLE AGENTS— **L. D. GIBBS & CO., Ltd., 166, Piccadilly, W.** Telephone—2504 Mayfair. Telegrams—"Birdlings."

Photography and FOCUS

Motor cyclists interested in the camera will find this journal interesting a d instructive.

Every Tuesday—One Penny.

NEW BOWDEN WIRE Buildings.



TO BE UP-TO-DATE YOUR MOTOR CYCLE MUST BE CONTROLLED BY **BOWDEN MECHANISM.**

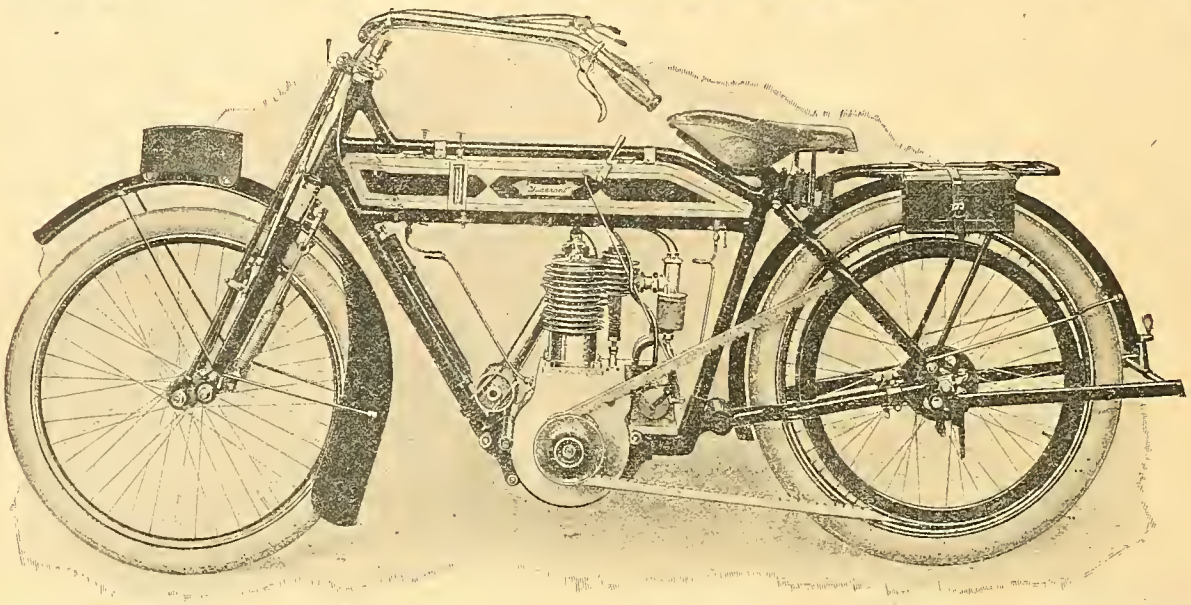
V.B.

THANKS to the universal use of Bowden Wire Mechanism greatly enlarged premises have become necessary. Every up-to-date motor cycle is now fitted with Bowden Control. Write for List.

OUR NEW ADDRESS—AFTER JANUARY 7th, 1911—

BOWDEN WIRE, Ltd., 37-41, Pratt Street, Camden Town, LONDON, N.W.

1911 "QUADRANTS" 1911



NEW MODELS:— 2 h.p. LIGHTWEIGHT. Engine 70 x 76 m/m. | 3½ h.p. STANDARD. Engine 85 x 88 m/m. | 4 h.p., with Free Engine and 2 Speed Gear. Han le Starting. Engine 84 x 100 m/m

Embody more distinctive features and practical improvements than any other motor cycle.

SIMPLE. EFFICIENT. ACCESSIBLE. SILENT. POWERFUL.

FULLY ILLUSTRATED PRICE LIST FREE FROM

"QUADRANT" (New Works), 45 to 53, Lawley St., Birmingham. (Coventry Works: Earlsdon.)

Agents please communicate from centres where we are not represented.

M.C.C. 24 HOURS' WINTER RUN.

THE A.J.S. LIGHTWEIGHTS

were as usual on top.

3 GOLD MEDALS AWARDED

The sensible all British Motor Cycle built on standard lines with NO experiments.

Catalogues free from

A. J. STEVENS & Co., Ltd., Retreat Street, Wolverhampton

London Agents:—

H. TAYLOR & Co., 21a, Store Street, Tottenham Court Road.

A10

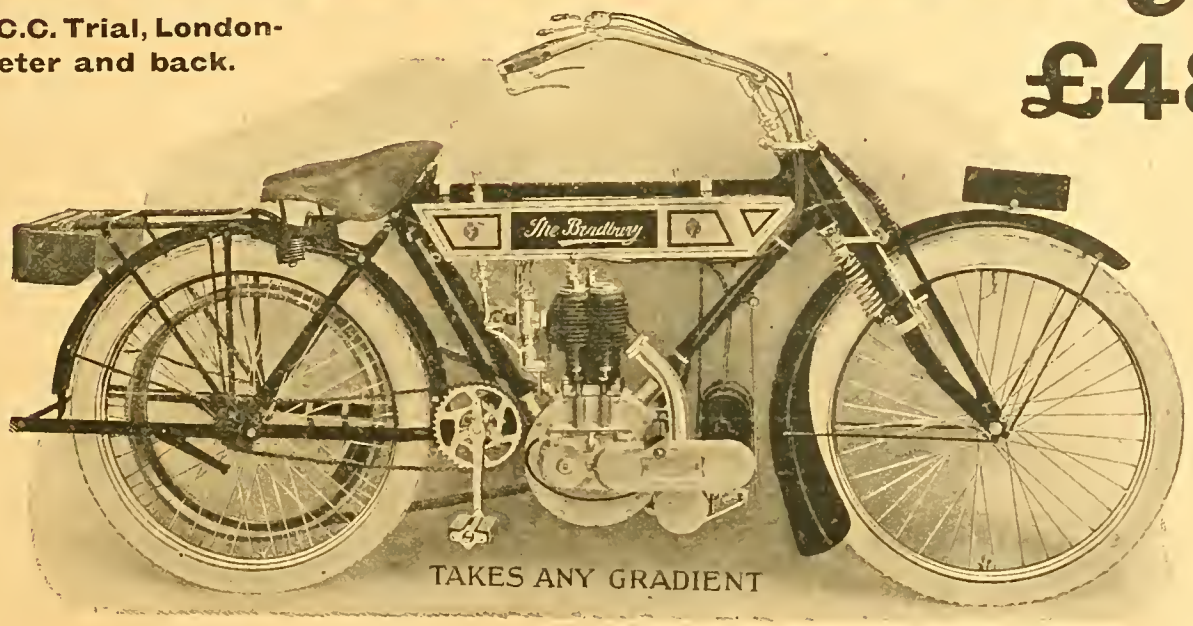
M.C.C. 24 HOURS' TRIAL.

7 BRADBURY RIDERS, NO FAILURES. The following riders competed successfully in the **LONDON TO EXETER TRIAL** and qualified for Gold Medals. We give below an extract from Mr. Hugh Gibson's letter, and bear out his statement as to his motor being a Standard 3½ Horse Power. Further comment is needless.

Bradbury

M.C.C. Trial, London-Exeter and back.

£48



Names of the Bradbury Riders: A Brittain, L. Browne, W. Cooper, H. A. Cooper, A. Deacock, Hugh Gibson, S. Webb.

EXTRACT FROM MR. HUGH GIBSON'S LETTER.

49, Chapel Street,
Southport,
December 28/10.

J. Howarth, Esq., Wellington Works, Oldham.

Just a line or two to show you that I can still hold a pen, although my wrists are stiff and sore. We had a wet night on Monday and a head wind, and the conditions were bad for a small powered engine that had to drag along 19 stone weight of passengers, 90 lbs. sidecar, and luggage, and 195 lbs. weight of the machine, that's about 550 gross weight, on heavy sticky roads. Of course we failed to climb every hill, but we were not the only ones, both solo and sidecar machines even with two and three-speed gears failed on several hills. My (or rather our) great achievement was to climb (in the dark) Yarcombe Hill over 2 miles long, gradient is 1-12 at the bad corners. We climbed this hill absolutely without a stop, or dropping the passenger. Over a score of solo riders failed on this hill, and our performance dumbfounded a large number of the competitors. Several people questioned the engine, stating that it was not standard. Will you put in the advt. that the engine was absolutely standard (1910) in every respect, fitted in 1911 frame and without pedal gear.

Yours faithfully, HUGH GIBSON.

In the Sheffield and Hallamshire M.C.C. Reliability Trial, Mr. J. Ardern on a 3½ H.P. BRADBURY was equal first with a rider of another make. There were 17 competitors but only nine finished.

BRADBURY & CO. LIMITED, OLDHAM.

In answering this advertisement it is desirable to mention "The Motor Cycle." A11

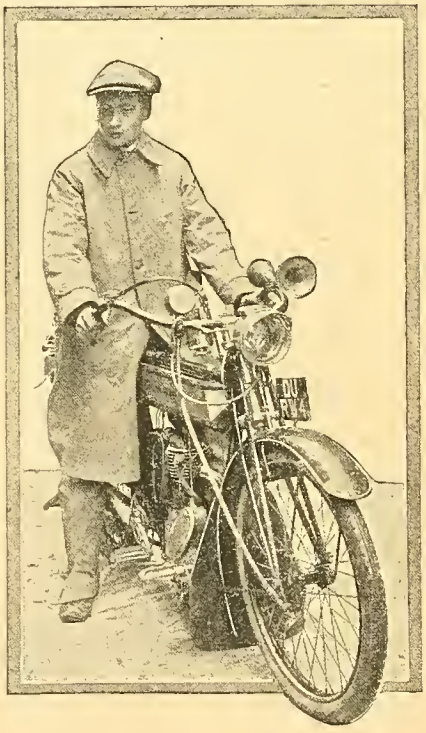
LONDON — EXETER — LONDON

M.C.C. WINTER RUN, Dec. 26-27.

Mr. B. ALAN HILL

with his

3½ h.p. Rudge



Fixed Engine,

£48:15:0.

Free Engine,

£55.

SCORED THE FIRST TIME OF ASKING

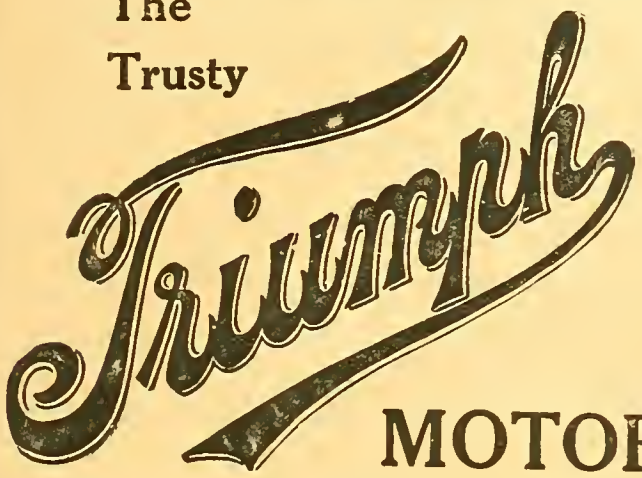
Taking GOLD MEDAL, the highest possible award.

WRITE FOR MOTOR BICYCLE CATALOGUE, POST FREE FROM—

Rudge-Whitworth, Ltd.,

(Dept. 600), COVENTRY.

The Trusty



MOTOR

Acquits itself well on Winter Roads.

Dec. 26th.

M.C.C. 24 Hours' Run, London to Exeter and back, 322 Miles.

Mr. C. C. Cooke	3½ h.p.	TRIUMPH	Completed the double journey in schedule time. All Amateur Riders.
Mr. R. Mundy	3½ h.p.	TRIUMPH	
Mr. J. R. Haswell	3½ h.p.	TRIUMPH	
Mr. A. E. Catt	3½ h.p.	TRIUMPH	

Dec. 27th.

N.W. London 12 Hours' Winter Run, Gloucester and back.

Mr. Eric Rose	3½ h.p. TRIUMPH	3rd	Silver Cup.

1911 Prices.

Roadster Model **£48 15s.**

Roadster Model with Free Engine **£55.**

T.T. Models **£50.**

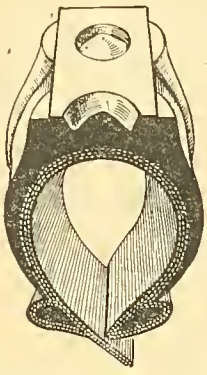
New Booklet, "Hints and Tips for Triumph Motor Cyclists," post free.

Triumph Cycle Co., Ltd., Coventry.

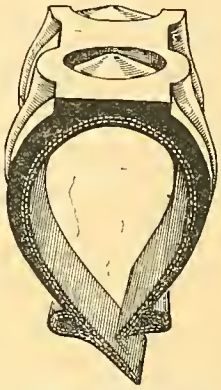
LONDON: 4-5, Holborn Viaduct, E.C.
GLASGOW: 101, Mitchell Street.
LEEDS: 4, King Edward Street.
MANCHESTER: 160, Deansgate.

The

KEMPSHALL



HEAVY NON-SKID.



LIGHT NON-SKID.

"May Fortune's
∴ hand you ∴
ALWAYS GRIP
∴ and from ∴
her path may
NEVER SLIP."

HEAVY ANTI-SKID.

LIGHT ANTI-SKID.

Greeting for 1911.

THE KEMPSHALL TYRE CO. (OF EUROPE), LTD.,

1, Trafalgar Buildings, Northumberland Avenue, London, W.C.

Telephone: No. 244 Gerrard (2 lines). Telegrams: "Studless, London." Birmingham: Reginald G. Priest, 71, Lionel Street. Paris: 46, Rue St. Charles. Antwerp: 61, Rue Haringrode.

Agents for the United States: CRYDER & Co., 583, Park Ave., New York.

C.D.C.

The one thing needed to make the Indian an ideal motocycle is now realised.

The

INDIAN

FREE ENGINE CLUTCH

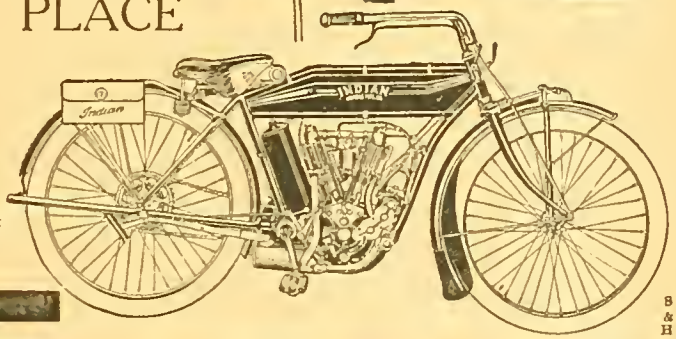
IS RIGHT—in every particular. It is the result of three years constant study and experiment, backed by all the resources of the great Indian factory. It has been thoroughly tested under every condition and over a long period.

IS IN THE RIGHT PLACE

just behind the engine and not in the hub, which is wrong for many reasons.

Catalogue Free.

HENDEE MANFG. CO.,
184, GT. PORTLAND ST., LONDON, W.



B & H

PALMER

MOTOR CYCLE CORD TYRES

are the most efficient because they are made on the right principle.

Did you see the enormous superiority of PALMER CORD TYRES over CANVAS TYRES demonstrated at the Olympia Cycle and Motor Cycle Exhibition?

It was an eye-opener!

PRICES of Palmer Motor Cycle Tyres GREATLY REDUCED. **Write for new list.**

THE PALMER TYRE LTD., 119, 121, 123, Shaftesbury Avenue, W.C.

THE . . .

DOUGLAS

Vibrationless Lightweight

The M.C.C. LONDON-EXETER WINTER RUN.

REMARKABLE EFFICIENCY UNDER ATROCIOUS WEATHER CONDITIONS.

3 STARTED—3 FINISHED.

One Gold & Two Silver Medals

Mr. Eli Clark, 2¾ h.p. DOUGLAS, completed the journey in the 24 hours, thus qualifying for a Gold Medal.

Mr. E. Kickham, 2¾ h.p. DOUGLAS, arrived seven minutes only outside time, qualifying for a Silver Medal.

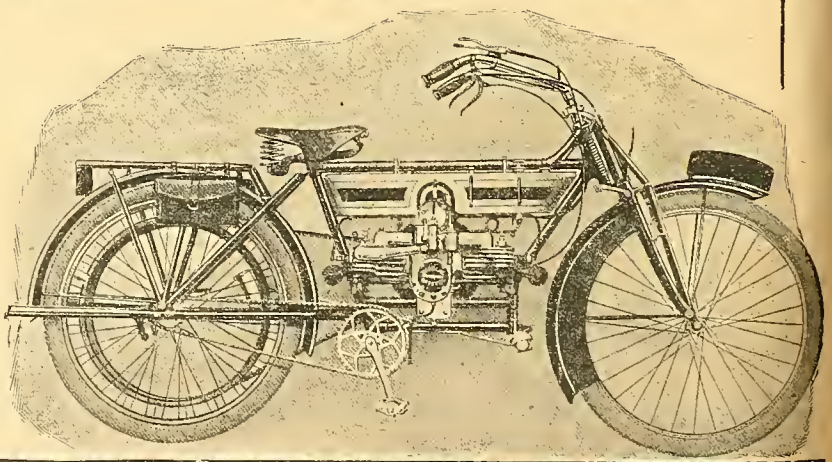
Mr. J. V. Robinson, 2¾ h.p. DOUGLAS, also succeeded in gaining a Silver Medal for his performance.

These riders were riding single-geared machines.

The Motor Cycle says: "The lightweights climbed well and steadily, particularly on the greasier and muddier sections, and altogether performed excellently."

The steadiest motor cycle in grease ever built.

END to END
Lightweight Record,
39 hours 40 minutes.
Mr. Eli Clark on 2¾ Douglas.



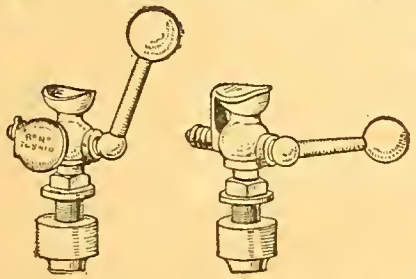
Full particulars from:

DOUGLAS Bros.,
Kingswood, BRISTOL.

Telegrams: "Douglas, Kingswood, Bristol."
Telephone No. 51, Kingswood, Bristol.

LONDON OFFICE:
336, Goswell Rd., E.C.

B.S.A. MOTOR BICYCLE—Constructional Refinements.



No. 3.—COMPRESSION COCK.

(Reg. No. 565410.)

A specially designed Compression Cock, consisting of lever and cover combined, is fitted to the B.S.A. Motor Bicycle. The opening of the Cock uncovers the cup, and vice versa.

Other features of the B.S.A. Motor Bicycle include the Aluminium Magneto Cover, Special Spring Fork, Patent Gudgeon Pin to Piston, B.S.A. Locking Screw to Pedal, all of which are fully illustrated and described in the new Catalogue of the

B.S.A MOTOR BICYCLE

"PERFECT IN EVERY PART."

Note the following Press comments:

"Notable for its clean design and excellent and elegant finish, the engine being an especially fine piece of work."—*The Motor Cycle*, 24th Nov., 1910.

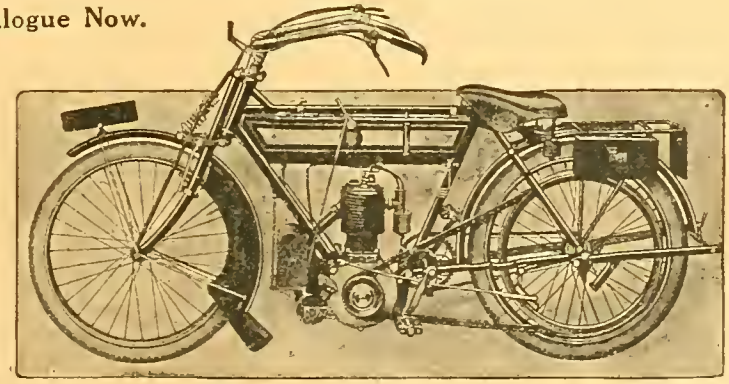
"To one who looks carefully, a number of clever and practical features at once become apparent."—*Motor Cycling*, 22nd Nov., 1910.

"Magnificent workmanship, and many detail ingenuities hoist the machine clean out of the ruck."—*Daily Mail*, 23rd Nov., 1910.

"Still further enhances the reputation of the B.S.A. Company."
—*Daily Express*, 23rd Nov., 1910.

Write for Catalogue Now.

THE BIRMINGHAM SMALL ARMS CO., LIMITED, 102, SMALL HEATH, BIRMINGHAM.



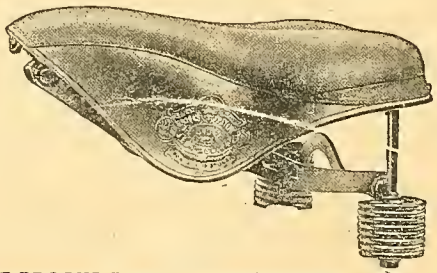
The B.S.A. 3½ h.p. Motor Bicycle .. £50
If fitted with Free Engine .. .. £56 10s.

USE ONLY B.S.A. SPECIALLY PREPARED CYLINDER OIL FOR MOTOR BICYCLES.

In the New Year
we wish every Wheelman
Comfort, Pleasure, Health,
and we offer you a Saddle
which will ensure them all—
the
Brooks

The BROOKS BOOK tells you all about it—
ask for copy.

J. B. BROOKS & Co., Ltd.,
49, Criterion Works, Birmingham.



THE BROOKS B104 P. Price (padded top) 29/-.

WAKEFIELD

Eminently suitable for AIR-COOLED ENGINES.

Mr Harry Martin, The WORLD'S RECORDS HOLDER, writes:—

"Dear Sirs,—I have pleasure in stating that the 'Wakefield Oil' supplied to me during the present season has given me entire satisfaction, the 'Castrol C.' in particular being most efficient, and is eminently suitable for air-cooled engines. Since April 13th I have won fifteen Firsts in Open Competition for speed (five of which were at Brooklands), and beaten World's Records on six different occasions, and I largely attribute my continued success to 'Wakefield Castrol C.'" Yours faithfully, Harry Martin, World's 200 miles Record Holder.

The Oil that Circulates Everywhere

The Oil that Circulates Everywhere

Write for name of nearest agent.

C. C. WAKEFIELD & Co., 27, Cannon St., London, E.C.

Telephone Nos.: Central 11305 and 1466.

Contractors to the British, Colonial, and Foreign Governments, Admiralty, War Office, 42 British Railways, etc.

CASTROL BRAND.

MOTOR OIL

CASTROL BRAND

C.D.C.

ZENITH-GRADUA FOR RELIABILITY

Sheffield and Hallamshire Club's Winter Run:

Mr. J. Haslam on a 3½ h.p. Zenith — 1st

Mr. C. Bellamy on a 3½ h.p. Zenith — 2nd

Out of 17 Starters only 9 finished in Schedule time,
Out of 4 Zenith Starters, all 4 finished in Schedule time,
Securing 1st, 2nd, and 3rd positions, and Silver Medal.

The Gradua Gear is infinitely variable between the high and low limits.

ZENITH MOTORS Ltd., WEYBRIDGE.

M.C.C. WINTER TRIAL.

ALL EYES have been on the M.C.C. LONDON-EXETER AND BACK RUN—the first Winter Trial ever held. What has been the result? - - -

THE

MOTOREVE

LIGHTWEIGHTS

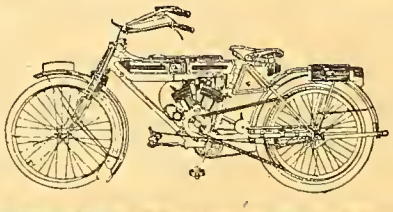
all went through without a hitch and won - - -

3 GOLD MEDALS.

An M-R. was the first lightweight to arrive at Exeter and also the first to arrive back in London. Moreover, the M-R. was **THE ONLY COMPLETE LIGHTWEIGHT TEAM OF MORE THAN ONE TO FINISH AT ALL** much less all win **GOLD MEDALS** with plenty of time to spare.

THE M-R'S DID IT!

New South Wales M.C.C. Hill Climb, M-R. tied for fastest time. 1st on formula easily.



Catalogue Free.

Moto-Reve Co., Ltd., Dept. A, Acton Vale, London, W.

S. & H.

A SILVER CUP AND GOLD .. MEDAL

won respectively in the N.W. London M.C.C. Winter Run and the M.C.C. London-Exeter and Back Winter Run prove the

BAT

BEST AFTER TESTS

to be an absolutely reliable all-weather motor cycle. Prospective owners now have these splendid performances as a guide in selecting a weather-proof mount. The BAT protected Magneto, Automatic Lubrication, BAT-J.A.P. Engine, Spring Frame and Forks, all helped.

LIST SENT FREE.

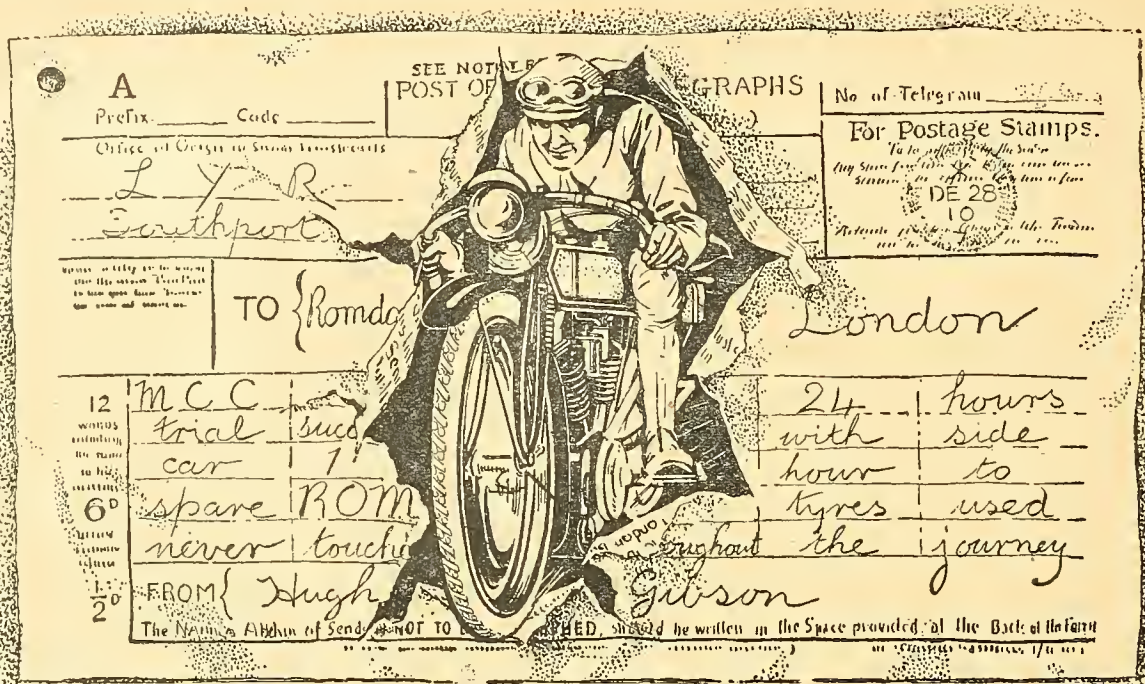
3½-4 h.p., £48 - 10. 5-6 h.p., £58.
7-8 h.p., £60.

THE BAT MOTOR MANUFACTURING CO., PENGE, LONDON, S.E.

These are the first Winter Trials ever held in this Country and have proved the superiority of the Bat for all - the - year - round service.

Darkness, Rain, Sleet, Mud, Grease, and every condition of road surface were experienced and conquered by the all-conquering Bat.

S. & H.



ROM TYRES AGAIN LEAD

The above telegram (also reproduced below) is yet another testimony of the excellence and superiority of "ROM" Tyres.

Romdon, London.

M.C.C. 24 hours' trial successful with side car, one hour to spare. "ROM" Tyres used never touched throughout the journey.

HUGH GIBSON.

Altogether 15 competitors using "ROM" All-British Tyres finished and gained gold medals. These trials represent the greatest test that has ever been demanded of Motor Cycle Tyres.

SEE YOU GET "ROM" TYRES.

The Rom Tyre & Rubber Co. Ltd.

31, BROOKE STREET
HOLBORN, LONDON

CONDS' AGENCY B'HAM

In answering this advertisement it is desirable to mention "The Motor Cycle."

"RONI" Burner.

Price .. 8d. each.

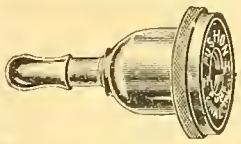
The "B.B." Pushon Instantaneous Pump Connector.

Fits all sizes and makes of valves, thus dispensing with different adapters. Makes a perfectly air-tight joint. Each.

No. 12992da. Motor cycle size, 9d.
,, 12992db. ,, refills, 2d.

"B.B.L." Motor Cycle Number Plate.

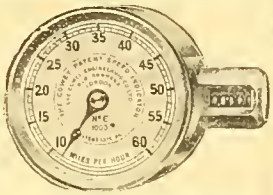
A very neat type for fixing to the front mudguard. Enamelled. Price 1/- each. Without lettering.



Motor Cyclists' Emergency Outfits.

Containing:—Self-adhesive plaster, lint, safety pins, bandages, sponges, needles, thread, tape, C.H. brush, carron oil for burns, ammonia for insect bites.

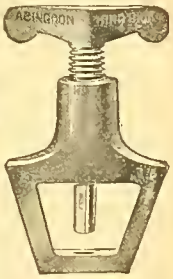
No. 12630a .. .. 1/- each.



'Cowey' Motor Cycle Speed Indicator with Distance Recorder.

No. 11589k. The "Cowey" Motor Cycle Speed Indicator is suitable for any make of motor cycle, with rigid or spring forks, and correctly registers speed up to 60 miles per hour.

Price: Brass or Nickel .. £4 4s.



No. 10299s. **"King Dick" Belt Drill,** each .. 1/6

No. 10299t. **"King Dick" Belt Punch,** each .. 1/6

Write for 1911 Pocket Catalogue of "Duco" Accessories

Browns

BROWN BROTHERS LTD.

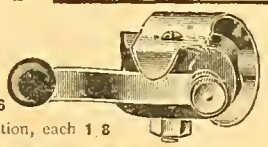
15, Newman Street, Oxford Street, W.

Wholesale only—GT. EASTERN ST., E.C. 271-273, Deansgate, Manchester.

Motor Cycle Handle-bar Switch.

Accumulator Ignition, ea. 2/6

Magneto Ignition, each 1/8

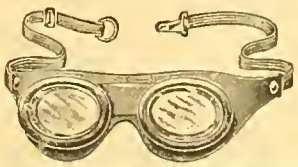


No. 10288c. **The "Celerio" Belt Fastener.** A thoroughly reliable belt hook which can be quickly detached, but will never slip apart at any speed.

Will fit ⅞ and 1in. belts .. .. .. 9d. each.

Swan-neck Seat Pillar.

Allows a low back position. Best make. Price 3/6 each.



GOGGLES.

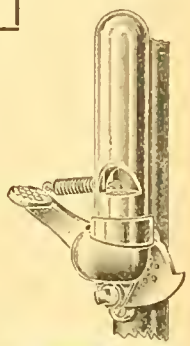
We have a large stock of these.

Price from 1/6 per pair.

Celerio Motor Cycle Exhaust Whistle.

This is a splendid road clearer and is foot operated. Suitable for one or two cylindered machines. Easily fitted.

No. 14196t .. each 7/6

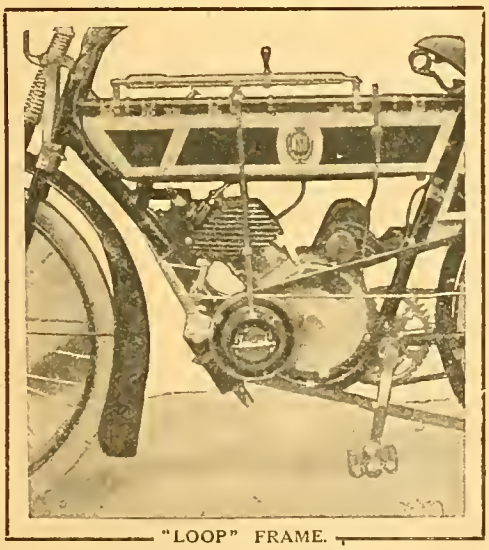


VALUABLE FEATURES OF THE

N.S.U.

MOTOR CYCLE.

THE "LOOP" FRAME.



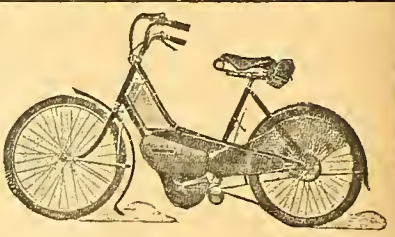
"LOOP" FRAME.

Quick and easy removal of the engine is made possible by the improved design of the frame. The engine is fixed with three lugs, and it is necessary to remove only the nuts and bolts, and detach the control—less than ten-minute job. The security of the frame and the mechanism is in every way perfectly assured. The pressed steel steering head adds strength to an already exceptionally strong frame. Look out for the next "valuable feature"—another good one. N.S.U. machines are the most convenient, and by far the most reliable and capable at high speeds upon rough roads. Let us tell you more about our 1911 models—full details for the asking. Weights and powers to suit all riders.

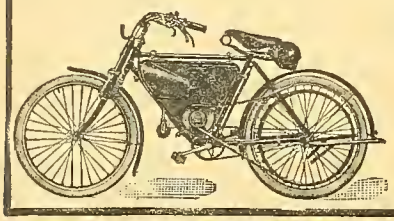
N.S.U. MOTOR COMPANY, LTD., Offices and Showrooms—186, Great Portland Street, London, W. Goods and Repairs—83-85, Bolsover Street, London, W. A.J.W.

Motosacoche

The Gentleman's Motor Cycle.



MADE like a Motor Cycle should be made —and MADE by men who made the FIRST LIGHTWEIGHT in the world—the Motosacoche was FIRST then, is FIRST now, and will be FIRST always. It was FIRST in the Scottish Trials !!!



MOTOSACOCHE, LTD.,

65, Holborn Viaduct, London, E.C.

Telegrams—"Motosacoche, London." Telephone—5439 Holborn.

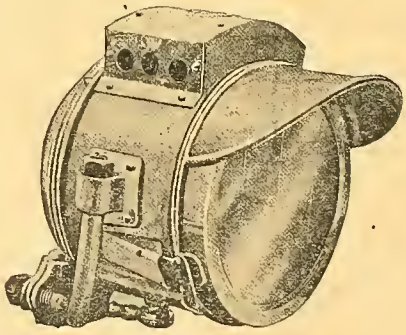
DUNHILL'S MOTORITIES

For Motor Cyclists.

Trouser Overalls, in double texture waterproof, 13/6, 16/6, and 21/-
In Dunwear, lined camel, 30/-

The Perfect Lamp

For Motor Cycles.



Dunhill's Acetylene Motor Cycle Lamp, Lens Mirror, Adjustable Focus, 18/6.

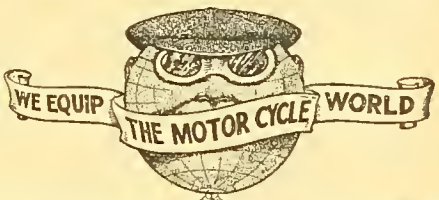
Solid Brass Exhaust Whistle. Very mellow note, 7/6.

The RIGHT GOODS at the RIGHT PRICES.

DUNHILL'S

WRITE for CATALOGUE.

88, Cross Street, MANCHESTER. **359-361, Euston Road, LONDON, N.W.** 72, St. Vincent Street, GLASGOW.



THINGS YOU WILL WANT FOR WINTER RIDING.

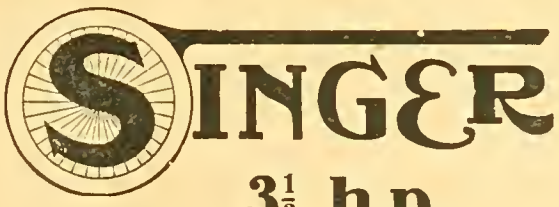
Service Lamps and Generator—best quality Mirror Lens, gives a powerful light, heavily plated and riveted throughout, **17/6.** Generator for same, **9/6.** The Famous F.R.S. Lamp Sets, 1911 models, comprising lamp, bracket, generator, and tubing, **50/-, 52 6, 56/-** and **58/6** set. C.W. Electric Headlight, single lamp, **11/6.** C.W. Electric Headlight, twin lamp, **22 6.** Glare Electric Headlight, **10/6.** Glare Accumulators, in metal cases, for attaching to down tube of machine, **20/-.**
The Service Handle-bar Muff. Covers all levers on handle-bar and keeps hands warm, a perfect boon, **9/6, 15/6, 22/6** pair. Magneto Terminal Covers, for protection from wet. **9d.** each. Rubber Magneto Covers, **2/6.** Entirely protects magneto from wet, and of best quality.
Service Leather Belting, absolutely the best and most flexible belt, ½, **1/9**; ¾, **2/-**; ⅞, **2/3** rin., **2/6** foot. Also a large stock of Belts at lowest prices. Beltleum, for preventing belt slipping, **6d.** bar. Liversidge Alternate Rubber and Steel-studded Non-skid Cover, 26 × 2, **52/-**; 26 × 2¼, **55/-**; 26 × 2½, **57/6.** Good Service Rubber Stud Non-skid Covers (Extra Heavy) 26 × 2½, **35/-**; Kempshall, Dunlop, Michelin, Continental, Palmer, and all leading makes. Service Butted Tubes, 26 × 2, **10/6**; 26 × 2¼, **11/6**; 26 × 2½, **12 6**; also Rich's Detachable Tubes, Michelin, Continental, Butted Tubes in stock. Holdtite Repair Outfits, **1/6** and **2/6**; Patent Holdtite Patches from **1/6** doz. Handle-bar Watches with weather-proof case, nickel-plated and spring back, **5/6.** Handle-bar Inspection Lamps, nickel-plated, **15/-.** Spare belt and Tube Cases, **9 6** and **10/6.** Spare Tube Case, **5/-.** Service Carrier Bag (waterproof), **12 6.** Brooks Carrier Bag, **21/-.** Brooks Carrier Bag, with inside case, **27/6.** Service Pannier Bags, **12/6.** Service Tube and Tool Bags, **12/6.** Brooks Frame Bags, **8/9** and **11/6.** Every make and design of Motorcycle Bags and Carriers. Mudflaps for front mudguards, **2/9**; with side wings **5/-.** Dall Adjustable Belt Fasteners, **1/6**; Forward ditto, **1/6**; Sentinel ditto. **1/6.** Every make stocked.

AT THE SERVICE CO., LTD., 292-293, HIGH HOLBORN, LONDON, W.C.

Motor Cycles, Accessories and Clothing. Cash, Exchange, or Gradual Payments.

S. & H.

You will be satisfied with the



3½ h.p.

if your desire is for an absolutely up-to-date motor cycle—a handsome, thoroughly dependable machine, economical to run and moderate in price.

Both Roadster and Tourist Trophy models are 3½ h.p., fitted with single-cylinder Singer engine; both have enclosed valves, repeating cut-out, and ratchet handle-bar control.

Back tyre punctures can be readily got at, for rear mudguard and carrier are quickly and easily detachable.

Singer motor cycles, in short, are soundly practical, workmanlike machines, thoroughly reliable under all conditions.

Let us send you full particulars.

Singer & Co. (1909), Ltd., Coventry.

London Showrooms :
17, Holborn Viaduct, E.C.

HAVE YOU SEEN

THE NEW TYPE

COMBINATION RUBBER AND STEEL STUDDED

Continental Tyre

FOR MOTOR CYCLES?

It is the finest non-skid yet devised, practically unpuncturable, resilient and fast. Scientifically constructed from the finest materials. Demand it from your Agent for your new mount, or full particulars will be forwarded on receipt of a postcard.

"Continental" Road Atlas of the British Isles now ready, price 4/- post free.

The Continental Tyre & Rubber Co. (Gt. Britain), Ltd.,
102-108, Clerkenwell Road, E.C.

BRANCHES: Birmingham. Newcastle. Glasgow. Manchester. Bristol. Dublin.

In answering this advertisement it is desirable to mention "The Motor Cycle."

Another Royal Enfield Success!

In the M.C.C. 24 Hours' Winter Trial,

London to Exeter and Back,

the new

$2\frac{3}{4}$ h.p. Royal Enfield

chain driven lightweight,

the only Royal Enfield which took part,

Completed the journey within schedule time

and qualified for

Gold Medal.

Particulars of previous victories are given in Pamphlet F—sent post free with our new lists on application.

Enfield Cycle Co., Limited,

Redditch, — and — 48, Holborn Viaduct, E.C.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns — 1d. per word, minimum 1s. Name and address must be counted. In the case of Trade Advertisements a series of thirteen insertions is charged as twelve.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," Coventry, or London (20, Tudor Street, E.C.), by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should state distinctly under what heading and in what issue the announcement appeared.

CLASSIFICATION BY LOCALITY.

For the convenience of purchasers of second-hand motor cycles, the advertisements are classified into districts, as many readers like to know what machines are for sale in their immediate neighbourhood before going further afield.

Plan showing division of England into Sections.

SECTION I.
Northumberland, Cumberland, Durham, and Westmoreland.

SECTION II.
York and Lancashire.

SECTION III.
Carnarvon, Denbigh, Flint, Chesbire, Derby, Stafford, Shropshire, Montgomery, and Merioneth.

SECTION IV.
Nottingham, Lincoln, Leicester, Rutland, Northampton, Warwick.

SECTION V.
Norfolk, Suffolk, Cambridge, Huntingdon, and Bedford.

SECTION VI.
Worcester, Hereford, Radnor, Brecknock, Monmouth, Glamorgan, Carmarthen, Cardigan, and Pembroke.

SECTION VII.
Gloucester, Oxford, Buckingham, Berks, Wilts and Hants, Channel Islands.

SECTION VIII.
Hertford, Essex, Middlesex, Surrey, Kent, and Sussex

SECTION IX.
Somerset, Devon, Dorset, and Cornwall.

SECTION X.
Scotland.

SECTION XI.
Ireland and Isle of Man.

WAUCHOPE'S.

No. 3083.—7 h.p. 1910 REX DE LUXE, latest model; **£47 10s.** Guaranteed.

No. 3084.—5 h.p. REX Litette, two speeds, water-cooled; **£35.** Guaranteed.

No. 3085.—3 h.p. 1910 Twin WOLF; **£28 10s.** Guaranteed.

No. 3099.—4 h.p. Twin N.S.U., magneto; **18 Guineas.** Guaranteed.

No. 3100.—3½ h.p. 1910 Standard PREMIER; **£35.** Guaranteed.

No. 3102.—7 h.p. 1910 Twin REX DE LUXE, M.O.V., latest model; **£47 10s.** Guaranteed.

No. 3103.—3½ h.p. 1910 Standard TRIUMPH; **£33 10s.** Guaranteed.

No. 3104.—8 h.p. 1910 Standard BAT; **£40.** Guaranteed.

No. 3105.—3½ h.p. 1908 Magneto BROWN; **£10 10s.** Guaranteed.

No. 3107.—3½ h.p. 1909 P. and M. Standard Model; **38 Guineas.** Guaranteed.

No. 3108.—7 h.p. 1910 Two-speed V.S.; **£48 10s.** Guaranteed.

No. 3113.—3½ h.p. 1910 Free-engine TRIUMPH; **£45.** Guaranteed.

No. 3116.—7 h.p. 1910 Two-speed V.S., with Millford spring wheel sidecar; **£55.** Guaranteed.

No. 3117.—4½ h.p. 1909 Twin MINERVA, magneto; **£25.** Guaranteed.

No. 3119.—5 h.p. 1908 Twin REX, magneto; **£22.** Guaranteed.

No. 3127.—3½ h.p. 1910 KERRY ABINGDON and sidecar; **30 Guineas.** Guaranteed.

No. 3130.—4 h.p. 1910 Two-speed ROC; **£35.** Guaranteed.

No. 3133.—3½ h.p. 1909 Standard TRIUMPH; **£30.** Guaranteed.

No. 3134.—2½ h.p. 1909 Standard MATCHLESS; **£22 10s.** Guaranteed.

No. 3135.—5 h.p. 1909 Two-speed V.S.; **40 Guineas.** Guaranteed.

No. 3136.—3½ h.p. 1909 Standard TRIUMPH; **£30.** Guaranteed.

No. 3137.—2¼ h.p. 1910 Two-speed F.N.; **£32.** Guaranteed.

No. 3139.—3½ h.p. 1910 Standard P. and M.; **£45.** Guaranteed.

No. 3141.—1¾ h.p. 1908 MOTOSACOCHE; **£14 10s.** Guaranteed.

No. 3142.—3½ h.p. 1910 Standard Tourist REX; **£30.** Guaranteed.

No. 3143.—5 h.p. 1910 Standard INDIAN; **£36 10s.** Guaranteed.

No. 3144.—5-6 h.p. 1910 Four-cylinder F.N. Standard Model; **30 Guineas.** Guaranteed.

No. 3149.—3½ h.p. 1910 Free-engine TRIUMPH, speedometer, horn, lamp, etc.; **£43.** Guaranteed.

No. 3150.—3½ h.p. 1910 Standard P. and M.; **£47 10s.** Guaranteed.

No. 3,060.—2¼ h.p. 1910 ROYAL ENFIELD, standard model; **£29.** Guaranteed.

No. 3,066.—3½ h.p. 1908 TRIUMPH, spring forks, magneto, adjustable pulley, etc.; **£26.** Guaranteed.

No. 3,065.—2¼ h.p. 1910 Two-speed F.N., shaft drive; **£30.** Guaranteed.

No. 3,051.—3½ h.p. 1910 T.T. TRIUMPH, standard model; **£37 10s.** Guaranteed.

No. 3,064.—3½ h.p. 1910 Standard TRIUMPH; **£35 10s.** Guaranteed.

No. 3,058.—8 h.p. MATCHLESS J.A.P., M.O.V., Nala two-speed model, with coach-built combination Millford sidecar, castor wheel; **£48.** Guaranteed.

No. 1,741.—3½ h.p. QUADRANT, magneto, spring forks, good tyres; **16 Guineas.** Guaranteed.

No. 3152.—3½ h.p. Twin PEUGEOT, magneto, Chater Lea No. 9 frame, latest model; **£25.** Guaranteed.

No. 3153.—3½ h.p. 1910 P. & M., standard model; **£47 10s.** Guaranteed.

No. 3154.—5-6 h.p. 1910 MATCHLESS, two-speed gear, and Chater-Lea sidecar; **£45.** Guaranteed.

No. 3156.—3½ h.p. 1908 N.S.U., magneto, spring forks; **£18 10s.** Guaranteed.

No. 3157.—3½ h.p. 1908 Two-speed N.S.U., magneto, spring forks; **£22 10s.** Guaranteed.

No. 3159.—2¼ h.p. 1910 Two-speed F.N., standard model; **£27 10s.** Guaranteed.

No. 3160.—3½ h.p. 1909 Standard Tourist REX; **£27 10s.** Guaranteed.

Machines quoted in this column are unsold when sent to the paper for publication, and are offered for sale subject to being unsold on receipt of cheque. Each machine carries our own guarantee.

WAUCHOPE'S,

9, Shoe Lane, Fleet Street, LONDON, E.C.

Telegrams, "Opificer London." 'Phone, 5777 Holborn.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, 2d. will be charged for registration and three stamped and addressed envelopes must be sent for forwarding replies. Only the number will appear in the advertisement. Replies should be addressed, "No. 000, c/o 'The Motor Cycle,' Coventry", or if "London" is added to the address, then to the number given, c/o "The Motor Cycle," 20 Tudor Street, E.C.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but if not we return the amount to the depositor and each party to the transaction pays carriage one way. For all transactions exceeding £10 in value, a deposit fee of 2s. 6d. is charged. All deposit matters are dealt with at Coventry, and cheques and money orders should be made payable to Iliffe and Sons Limited.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR BICYCLES FOR SALE.

SECTION I.

Northumberland, Cumberland, Durham, and Westmoreland.

1¾h.p. Lightweight F.N., magneto, spring forks, good condition; £14 10s.—Shaw, 11, Ferndale Av., East Boldon, Sunderland.

3½h.p. N.S.U., magneto, two-speed and free engine, Brown and Barlow, h.b. control, large footboards, new Whittle belt, sound reliable machine; £25.—Cowper, 4, Thorburn St., Fulwell, Sunderland.

3½h.p. N.S.U., Model Luxe, brand new, guaranteed; list price £46, our clearance sale price £37, great bargain.—Turvey and Co., sole agents for Triumphs and Humbers, the motor cycle people, Sunderland.

2h.p. Humber Lightweight, new, not even shop-soiled, magneto ignition, best lightweight on the market; clearance sale price £32.—Turvey and Co., sole agents for Triumphs and Humbers, The Motor House, Sunderland.

1¾h.p. Enfield Lightweight, twin engine, magneto ignition, practically new Palmer cord tyres, model luxe; a bargain to clear, £26.—Turvey and Co., sole agents for Triumphs and Humbers, The Motor House, Sunderland.

SECTION II.

York and Lancashire.

1910 5h.p. Rex de Luxe, run very few miles, better than new; £47.—Bel.w.

1910 5h.p. Rex Tourist, unscratched, very fine machine, Palmer cords; £37.—Below.

LATE 1908 Rex, 3½h.p., Mabon clutch, everything first-class condition; £25.—Below.

REX, 3½h.p., just enamelled and plated, one of the best; £10.—Below.

MINERVA, 3½h.p., £12; F.N., 1¾h.p., Mabon clutch, Whittle belt, £7.—Stanley Motor Garage, Westbrook St., Bolton.

BRADBURY, 1911 machine; send for list; early delivery.—Golby, Bradford Rd., Batley.

DOUGLAS, 1910, excellent order, spares; £32, or exchange 1911 Scott.—24, Lathom Rd., Southport.

JULY, 1910, Humber, two-speed, equal to new; £37 10s.—Full particulars, Henry Garforth, Anvil St., Brighouse.

1908 Triumph, good order throughout, back tyre and belt nearly new, lamp, and spares.—Simpson, c/o Park Road Garage, Ormskirk.

TRIUMPH Free Engine, 1911, in stock, also Humber lightweight; early deliveries B.S.A. and Rovers.—Hainsworth, Ltd., Batley.

2¼h.p. Royal Enfield, 1910 model, shop soiled, £30; 3½h.p. N.S.U., 1908 model, magneto, good running order, £10.—A. B. Wardman, 19, Princes St., Harrogate.

F.N., 4-cyl., 5-6h.p., splendid condition, £25; also F.N., 4-cyl., 3½h.p., £12 10s.; both machines in good running order.—Tattersall, 48, Ayresome St., Middlesbrough.

In answering these advertisements it is desirable to mention "The Motor Cycle."

PANIC PRICES.

NEW 1910 REXES

BEARING MAKERS' FULL GUARANTEE.

Brand New and Unused.	Makers' Price.	Our Price.
3½ h.p. Speed King	—	£39 10
5 h.p. Speed King, M.O.V.	—	£42 10
3½ h.p. Tourist	£48 0	£42 0
5 h.p. Twin Tourist	£51 0	£45 0
3½ h.p. Plate Clutch	£54 0	£47 10
5 h.p. De Luxe	£62 0	£54 10
5 h.p. Sidette	£75 0	£64 10
1911 De Luxe Sidecars to fit these models		£6 6

SECOND-HAND REX BARGAINS.

1910 3½ h.p. **Rex** Speed King, a gem £32 10
1910 3½ h.p. **Rex** Speed King, "grey" £33 10
1910 3½ h.p. **Rex** Speed King, spring forks £34 10
1910 Special 3½ h.p. **Rex**, chain drive, plate clutch £36 10
1910 3½ h.p. Tourist Trophy **Rex** £34 10
(This is one that finished the course.)
1910 5 h.p. **Rex** Speed King, "grey" £34 10
1910 5 h.p. **Rex** Speed King, M.O.V. £36 10
1910 5 h.p. **Rex** Speed King, M.O.V., spring forks £37 10
1910 3½ h.p. Tourist **Rex**, grand order £32 10
1910 5 h.p. Tourist **Rex**, grand order £35 10
1910 5 h.p. **Rex de Luxe**, two speeds, M.O.V. £47 0
1909 3½ h.p. **Rex** Tourist, smart and good £28 10
1909 3½ h.p. **Rex**, two speeds £32 10
1909 5 h.p. **Rex** Tourist, splendid machine £31 10
1909 5 h.p. **Rex de Luxe**, two speeds £38 10
1908 5 h.p. **Rex**, Roc clutch, two speeds £32 10
1908 5 h.p. **Rex** Tourist £26 10
1908 3½ h.p. **Rex** Tourist, magneto £24 10
1908 3-6 h.p. **Rex** Lightweight, magneto £16 10
1907 3½ h.p. **Rex**, magneto, spring forks £19 19
1907 5½ h.p. Twin **Rex**, specially good £16 10
1906 3½ h.p. **Rex**, M.O.V., spring forks £16 10
3½ h.p. Light, Low **Rex**, free-engine clutch £14 10
Light, Low **Rex**, with 3 h.p. Humber engine £12 10
3½ h.p. **Rex**, h.b. control, long bars, low saddle .. £9 15

SPECIAL BARGAIN.

5½ h.p. Twin **Rex**, spriog forks, and wicker sidecar, £18 10s.
First cheque secures. Guaranteed.

TRIUMPHS.

1907 3½ h.p. **Triumph**, spring forks, magneto £25 0
1908 3½ h.p. **Triumph**, spring forks, magneto £29 10
1909 3½ h.p. **Triumph**, spring forks, magneto £35 0
1910 3½ h.p. **Triumph**, spring forks, magneto, new £43 0

OTHER MAKES.

1910 5 h.p. **Indian**, green, like new, trials only £46 10
4 h.p. Twin **N.S.U.**, two speeds £33 10
1908 5 h.p. **V.S.**, Truffault forks £29 10
3½ h.p. Two-speed **Brown**, chain drive, handle start ing, 26in. wheels £25 0
3½ h.p. Magneto **Minerva**, very powerful £18 10
1907 3½ h.p. **Quadrant**, spring forks, grand machine £16 10
Phelon and Moore, two speeds £22 10
3½ h.p. **N.S.U.**, magneto, lamp, horn, stand, spares, adjustable pulley, Whittle's belt £19 0
3½ h.p. Magneto **Quadrant**, spring forks £24 0
3 h.p. **N.S.U.**, magneto, good value £17 10
Twin-cylinder Magneto **Werner**, lightweight £22 10
3 h.p. **Quadrant**; cash only; untested; bargain £5 15
2¼ h.p. **Bradbury**, h.b. control; cash; bargain .. £5 15
2¼ h.p. **Singer**, trembler coil, goes well £4 15

6 Shop-soiled (unused) Sidecars, rigid type, 26 x 2in. beaded edge motor cycle tyre, art cane body, well sprung. Price for speedy clearance, £1 7s. 6d.

£3 DOWN and 5/- Weekly secures prompt despatch of any of these machines.

3 h.p. **Brown**, spray, Watawata £9 10
1907 3½ h.p. **Bradbury**, Dunlop non-skids £15 10
2¼ h.p. **Bradbury**, good order £8 15
3 h.p. **Brown**, vertical, spray, smart £9 10
3 h.p. **Ariel**, M.O.V., 26in. wheels, spray £10 0
3 h.p. **Quadrant**; cash only; untested; bargain £5 15
3½ h.p. **Werner**, light, low, and powerful £13 10
2¼ h.p. **Bradbury**, h.b. control; cash; bargain .. £5 15
3 h.p. **Quadrant**, vertical, spray; bargain £9 0
3½ h.p. **Excelsior**, spray, goes well £6 10
3 h.p. **Quadrant** Tricycle, free engine £9 10
3½ h.p. Light, Low **Rex**, special engine £12 10
3½ h.p. Light, Low **Rex**, free engine £14 10
3½ h.p. **Humber**, very smart machine £11 10
3½ h.p. **Rex**, 22in. frame, goes well £9 10

The Halifax Motor Exchange

Largest Rex Dealers
16, Westgate, HALIFAX.
'Phone, 766. Telegrams: "Perfection."
Business Hours—9 a.m. to 6 p.m.; Thursday 1 p.m.

MOTOR BICYCLES FOR SALE.

1910 Hobart Lightweight, 2¼h.p., very little used perfect condition; approval with pleasure: bar gain, 27 guineas.—70, Worcester St., Gloucester.

2h.p., Chater-Lea frame, low position, Kerry engine, F.M. carburetter, accumulator, excellent condition; £12.—R. P. Alderser, Knapton, Walton-on-Thames.

MINERVA, 2¼h.p., magneto, spring forks, latest Amac, new tyres, belt, switch, N.A.P. pillar Brooks 105P carrier, good condition; £18, lowest.—Jones, draper, Fordingbridge.

TRIUMPH, 1909, only used three months, owing to illness, excellent condition; expert examination if desired; price, including large number of accessories lamp, magneto spare parts, spare belt, etc.; £35.—Apply, Capt. Gardiner, Mooltan Barracks, Tidworth, Wilts.

SECTION VIII.

Hertford, Essex, Middlesex, Surrey, Kent, and Sussex.

3½h.p. Rex, good order; £9 10s.

2¾h.p. Werner; £7 10s.

2½h.p. Minerva; £7.

THE Hammersmith Motor Exchange, 178a, King St., Hammersmith. 'Phone 716 Hammersmith

1910 Douglas; a real gem; £32.—Bunting, Wealdstone.

1910 Enfield Lightweight; bargain, 28 guineas.—Bunting, Wealdstone.

1910 Triumph, been kept as an ornament; worth £48 15s.; accept £40.—Bunting, Wealdstone.

WILTON Cycle Co., Victoria, S.W.—See bargains below; all best makes in stock.

WILTON.—Matchless; sole S.W. London agents.

WILTON.—Bradburys district agents; 1911 free engine model in stock.

WILTON.—Triumph agents; 1911 standard model in stock.

WILTON.—Clyno, sole S.W. London agents; early deliveries of patent two-speed chain driven models, also belt driven models.

WILTON.—Kerry-Abingdon agents; 1911 standard model in stock.

WILTON.—Enfield agents; delivery from stock.

WILTON.—Early deliveries 1911 V.S., Singer A.C. Sociable, etc.

WILTON.—1910 Triumph clutch model, with accessories; £45, as new.

WILTON.—1910 Triumph, clutch model, with accessories and spares, splendid condition; £43.

WILTON.—1910 Bat-J.A.P., 8h.p., spring frame and forks, Palmer cords, etc., splendid condition; £45

WILTON.—1910 V.S., 5h.p., new, splendid for sidecar work, spares, etc.; £49.

WILTON.—Ariel-Minerva, 2¼h.p., handle-bar control new tyres and belt, accessories, adjustable pulley; £7 10s.

WILTON.—Chater-Lea-Minerva, 2¼h.p., Palmer tyres, and accessories, good order; £8 10s.

WILTON.—Kelecom, 3½h.p., new tyres, accessories; £7 10s.

WILTON for best exchanges; instalments arranged.

WILTON Cycle Co., 110, Wilton Rd., Victoria, London, S.W. 'Phone, 5115 Westminster.

TAYLOR.—1911 A.C. Sociable; January deliveries guaranteed.

TAYLORS.—1910 3½h.p. Triumph, Mabon free engine clutch, not run 100 miles; £42.

TAYLORS.—1910 7-9h.p. Indian, very fast, fine condition; £52.

TAYLORS.—1910 1¾h.p. Motosacoche, magneto, Palmer tyres; £26 15s.

TAYLORS.—1910 2¼h.p. Douglas, little used; £31 10s

TAYLORS.—1910 5h.p. Rex de Luxe, two-speed, sidecar machine; £44.

TAYLORS.—6h.p. Bat-J.A.P., twin, spring frame and forks; £19 10s.

TAYLORS.—1911 2¼h.p. F.N., two-speed, plate clutch, not run 10 miles; £42.

TAYLORS.—5h.p. twin Rex, just overhauled; £15 10s.—21a, Store St., W.C.

F.N., 2¼h.p., 1910, perfect, all accessories; nearest £28.—52, Perry Hill, Catford.

TRIUMPH, 1911, in stock, for immediate delivery.—Rey, 5, Heath St., Hampstead.

ROC, 4h.p., 10.0.V., magneto, two speeds, fine order; £26.—7, Trewint St., Earlsfield.

2¾h.p. F.N., in perfect running order; seen after 8 o'clock; £9.—104, Valletta Rd., Acton.

SIEMENS-OBACH DRY BATTERY IGNITION

and the

M.C.C. WINTER TRIAL.

Message from Mr. Harold Karslake:

"No trouble all the way. Ignition and lighting excellent. Arrived back one hour before schedule time. No failures on hills."

Mr. Karslake used one Siemens-Obach Dry Cell Ignition Battery all the way (322 miles), and carried no stand-by. His electric head lamps, inspection lamp, and sling lamp were all lit with Siemens-Obach Dry Batteries.

Please write for Catalogue No. 37 M.

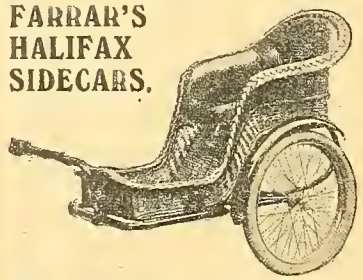
Siemens Brothers and Company, Ltd.,
CAXTON HOUSE, WESTMINSTER, S.W.

"WHAT A 'MUG'

not to have had one long ago—they are splendid in grease."

SO WRITES A USER OF—

FARRAR'S HALIFAX SIDECARS.



LIGHT, STRONG, AND SPLENDID VALUE.

SPRUNG LIKE A CAR.

FARRAR'S SIDECARS are sprung both fore and aft, **CLEAR OF THE FRAME,** on special springs which are **UPTURNED C** shape at both ends, a refinement found on no other make. **THEN AGAIN,** Note where the front arm grips the centre of the sidecar frame, and compare this with the lobsided attachment adopted by some makers.

Price £6 5s.

complete with Mudguard and

HUTCHINSON or CONTINENTAL TYRES.

Discount to the Trade.

Delivery from stock to suit TRIUMPHS, REXES, P. and M.'s, N.S.U.'s, etc.

ENGINES.	ENGINES.
3½-4 h.p. PEUGEOT, variable pulley	£4 10
4½ h.p. Twin MINERVA, M.O.V.	£6 10
BRAND NEW 8 h.p. Twin MINERVA, M.O.V., guaranteed six months	£11 11
BRAND NEW 5½ h.p. Twin N.S.U.	£9 10
5 h.p. Twin, air-cooled	£4 0
4 h.p. Water-cooled Engine, vertical	£5 5
Phelon and Moore Engine and Frame.....	£5 10

Other Engines accepted Part Payment.

TYRES.	TYRES.	TYRES.
CLINCHER, rubber studded, 26 × 2¼in. ..		25/-
HUTCHINSON, beaded, 28 × 2 or 2¼		18/6
" " 26 × 2¼in.		18/6
" " 26 × 2½in.		22/-
CONTINENTAL, beaded, 26 × 2in.		17/6
GORTON, beaded, 26 × 2¼in.		14/6
Guaranteed Tubes, HUTCHINSON, 26 × 2¼		8/6
" " CONTINENTAL, 26 × 2		7/6
750 × 75 mm. CLINCHER Car Covers, new		39/6
750 × 75 mm. DUNLOP Car Covers, wired		30/-

We supply all makes. Good allowance on your old ones. Let us quote you.

CARBURETTERS.	CABURETTERS.
1911 B. & B., new, h.b control	25/-
1910 B. & B., new, h.b. control	22/-
1910 Amac, new, h.b. control, vary jets....	22/-

MISCELLANEOUS BARGAINS.

B100 Saddle, good	9/6
Fit-All Two-speed Gear, new	£4 4
24 x 2¼ Rich Detachable Tube	7/6
28 x 2¼ Hutchinson Butted Tube, new	9/6
Mabon Clutch, fit Triumph	30/-
Lycett's Tubular Carriers, new	4/11
Fulmen High Tension Magneto.....	45/-
Price's Stands ..... per pair	5/-
Kerry Latchbar Stands, new.... "	7/6
Two Speed and free engine gear box, new ..	£3 10
Tricar Frame, wheels, etc.	£4 0
New Lycett's Saddle, coil springs, L/109	15/-
New Lycett's Saddle, plated, L/76	8/6
New Lycett's Carrier Toolbag	6/-
Goodlad's Speed Indicator..	15/-
"Prested" Accumulators, new	9/6
New Frame for vertical engine	30/-
New Bosch Plugs .....post free	3/6
New Sidecar Baskets, green or red.....	23/-
New Prested Midget Trembler Coils	15/6
300 Mirror Lens Lamps, separate generator..	12/6
New XL'All Spring Forks, latest pattern....	14/-
Rex Pattern Patent Handle-bars, new	5/6
Sidecar Aprons, with straps and hooks.....	7/6
Rex Pattern Foot Brake, new	9/6
Tricar Frame, suit 6 h.p. engine	80/-

Farrar's Motor Exchange

19, 21, 23, 25, Hopwood Lane,

HALIFAX (Two minutes from G.P.O.)

Telephone 919.

MOTOR BICYCLES FOR SALE.

ST. ALBANS.—1908 3½h.p. Quadrant, magneto, good condition; £17 10s.

ST. ALBANS.—1910 3½h.p. Bradbury, perfect hill eater; £32 10s.

ST. ALBANS.—1910 5h.p. twin Red Indian, good as new; £45.

ST. ALBANS.—1908 5h.p. twin Rex, grand sidecar machine; £22.

ST. ALBANS.—5h.p. late 1909 Rex, nearly new; £30.

ST. ALBANS.—Agents for the famous Silent Indians.

ST. ALBANS.—Agents for the hill eating Bradburys.

ST. ALBANS.—Agents for Triumphs and all leading makes; order new and get early deliveries.

ST. ALBANS.—All accessories in stock.

ST. ALBANS.—Officially appointed repairers to R.A.C. (Motor Cycle Section); no repair too small or large.

HUMBERS, 1911, in stock; give immediate delivery.—Rey, 5, Heath St., Hampstead.

HAMPSTEAD for Bargains.—Heath Street Motor Works, 5, Heath St. Tel.: 2678, P.O.

HAMPSTEAD.—1910 Douglas, splendid condition, all accessories; £27; good tyres; special bargain.

HAMPSTEAD.—1909 Douglas, with all accessories, nice condition; £24; a fine machine.

HAMPSTEAD.—4-cyl. F.N., 4½h.p., with side Cowey speedometer, 4-note horn; £20.

HAMPSTEAD.—1910 Triumph, almost new, soiled condition only, with accessories; £42; guaranteed.

HAMPSTEAD.—1909 Triumph, splendid condition, all accessories; £30, great bargain; good tyres.

HAMPSTEAD.—1910 Kerry-Abingdon, few weeks old, all accessories; great bargain, £28.

HAMPSTEAD.—Sole London wholesale and retail agents for Lincoln Elks; all models in stock.

HAMPSTEAD.—Indian, 5h.p., 1910, few weeks old; £38, special bargain.

HAMPSTEAD.—Triumph, 1911, now in stock; no waiting; give immediate delivery.

HAMPSTEAD.—3½h.p. Quadrant, spring forks, good condition, all accessories; great bargain, £15.

HAMPSTEAD.—3½h.p. magneto Brown, two-speed gear, special for sidecar; £18.

HAMPSTEAD.—1910 3½h.p. Rex, grand condition, all accessories, £29; 5h.p., 1909, £26.

HAMPSTEAD.—5h.p. twin Peugeot, Chater frame; £13; all accessories, fine order.

HAMPSTEAD.—1910 3h.p. Lincoln Elk, magneto, all accessories, splendid condition; £18.

HAMPSTEAD.—1907 Triumph, magneto, and spring forks, all accessories; special bargain, £24.

HAMPSTEAD.—Twin Kerry, special, for sidecar, all accessories; great bargain, £10.

HAMPSTEAD.—2¼h.p. 1911 F.N., two-speed and free engine, as new, all accessories; £42.

HAMPSTEAD.—1911 F.N., 4-cyl., latest type, only few weeks old; £44.

HAMPSTEAD.—1911 2¼h.p. two-speed F.N.'s; £45; no extra for easy payments.

HAMPSTEAD.—Douglas, 1911, from stock; 5 per cent. extra for easy payments.

HAMPSTEAD.—Triumphs, 1910, in stock, free engine models and standards; no waiting.

HAMPSTEAD.—F.N.'s, latest models, 1911, in stock; no extra for easy payments.

HAMPSTEAD.—1909 Triumph, splendid condition, with all accessories, good tyres; special bargain, £29 10s.

HAMPSTEAD.—1910 3h.p. Lincoln Elk, magneto good condition, all accessories; £18.

HAMPSTEAD for latest 1911 models, in stock (Triumphs, Indian), Premier, Douglas, Rexes, Humber, etc.; exchanges or gradual payments.—Rey, 5, Heath St Tel.: 2678 P.O., Hampstead

NEW Century Motor Cycle Co., proprietor, Dudley R. Clarke, 96, London Rd., St. Albans.

1910 Douglas, almost new, many extras; £34.—Wrench's, 388, Euston Rd., N.W.

3½h.p. Triumph, 1907, magneto, speedometer, etc.; £25.—Churchill, Park St., Croydon.

SCOTTS and Zeniths, Bradburys; immediate delivery in January.—Rey, 5, Heath St., Hampstead.

DOUGLAS, 1911, all models; immediate delivery; no waiting.—Rey, 5, Heath St., Hampstead.

TRIUMPH, 1910 (October), headlight, accessories; nearest £40.—74, Croydon Rd., Beckenham.

BAT, 3½h.p., spring frame, genuine De Dion engine perfect; £13.—302, Earlsfield Rd., Wandsworth

TRIUMPH, 1909, clutch model, perfect, headlight, accessories; nearest £36.—52 Perr Hall, Catford

BUY NOW.

Prices are sure to Advance.

CASH, CREDIT, or EXCHANGE.

½ h.p. 1909 **Bradbury,** fine goer	£27 0
1909 Clutch **Triumph,** new back tyre.....	£40 0
1910 3½ **Minerva,** Bosch magneto, h.b. control.....	£28 0
5-6 **Rex de Luxe,** Roc clutch, magneto	£24 0
1910 Clutch **Triumph,** splendid order	£48 0
1910 **Rex** Sidette Sidecar.....	£8 0
1910 **P. and M.** Two-speed Lightweight ..	£40 0
1910 5-6 h.p. **Rex de Luxe,** two speeds, M.O.V.	£47 0
1910 5-6 h.p. **Rex de Luxe** Sidette Sidecar, M.O.V.	£55 0
1910 5-6 h.p. **Rex de Luxe,** two speeds, A.I.V.	£44 0
1910 5-6h.p. **Rex** Sidette, two speeds, A.I.V.	£52 0
3½ h.p. 1908 **Rex,** magneto, Amac.....	£24 0
3 h.p. **Singer,** Bosch magneto, V belt	£16 0
5-6 h.p. Twin **Rex,** spring forks, low	£15 10
5-6 h.p. Twin **J.A.P.,** very good.....	£18 0
1910 5 h.p. **Rex,** spring forks and Cantilever	£35 0
1909½ 5 h.p. **Rex,** splendid traveller	£33 0
6 h.p. **Antoine,** Bosch magneto, h.b. control	£20 0
1909 3½ h.p. **Rex de Luxe,** two-speed model	£34 10
1910 4 h.p. **N.S.U.,** single-cylinder, new ..	£40 0
1906 3½ h.p. **Rex,** m.o.v., 26in. wheels	£14 0
1910 3½ h.p. **Rex** Tourist, good	£33 0
1910 **Rex** Speed King, extra good	£33 0
1909 **Rex** Speed King, 24in. wheels	£27 0
3½ h.p. **Rex,** Bosch magneto	£15 0
3½ h.p. **Peugeot,** Rip spring frame.....	£16 0
3½ h.p. 1909 **Rex,** Mahon clutch	£29 10
3½ h.p. 1907 **Rex,** splendid puller	£15 10
1909 3½ h.p. **Rex** Tourist, good order	£29 10
1908 **Rex,** magneto, h.b. control	£19 0
1908 **N.S.U.** Lightweight, magneto	£19 0
3½ h.p. **Rex de Luxe,** two speeds, handle starting, magneto, h.b. control	£27 0
One ditto, 1910 cylinder	£30 0
1909 Twin **Rex,** special, good	£29 0
6 h.p. Twin **Rex,** spring forks, 26in. wheels	£16 10
Twin Fairy, h.b. control	£14 0
3½ h.p. **Clyde,** M.O.V., magneto ignition ..	£14 0
2 h.p. **Minerva,** M.O.V., spray	£7 0
3 h.p. **Rex,** Amac, h.b. control	£9 0

£4 DOWN SECURES ANY OF THESE. BALANCE 6/- PER WEEK.

3½ h.p. Low **Rex,** M.O.V., Druids, 1910 Amac	£14 0
3½ h.p. Low **Rex,** M.O.V., 21in. frame	£11 0
3½ h.p. 1906 **Rex,** spring forks, 26in. wheels	£14 0
4 h.p. **King,** vertical engine, h.b. control..	£11 0
Twin **Fairy,** very low, h.b. control.....	£14 0
2½ h.p. **Minerva,** spray carburetter, good value	£9 0
3½ h.p. **Clyde,** M.O.V., magneto ignition....	£14 0

£5 DOWN SECURES ANY OF THESE. BALANCE 7/- WEEKLY.

3½ h.p. 1907 **Rex,** grand goer.....	£15 10
3½ h.p. **Rex,** vertical, Bosch magneto	£15 0
3½ h.p. **Peugeot,** Rip spring frame	£16 0
3 h.p. **Singer,** V belt, Bosch magneto	£16 0
5 h.p. Twin **J.A.P.,** very good	£18 0

CARS AND TRICARS.

5½-6½ h.p. **Rexette,** two speeds, a beauty ..	£24 0
Humberette Car, 6 h.p., three speeds	£25 0
6 h.p. **Rover** Tricar, good goer	£17 0
5-6 h.p. **Lifette** Tricar, water-cooled, Roc two-speed gear, handle starting, magneto ignition, a beautiful light tricar	£35 0
5 h.p. **Bradbury,** two speeds, handle starting	£19 19

CLINCHER RUBBER-STUDDED TYRES, 26 x 2¼ only, 25/- each.

Magnetos. Magnetos.

LARGE STOCK, ALL MAKES.

Shall we quote you?

WANTED. WANTED.

Triumphs, Rexes, Minervas, N.S.U.'s, Douglas's, Moto-Reves, and other magneto machines.

Cash Waiting.

FARRAR'S

MOTOR EXCHANGE,

19, 21, 23, and 25, Hopwood Lane,

HALIFAX.

Telephone 919. (Two minutes from G.P.O.)

In answering these advertisements it is desirable to mention "The Motor Cycle."

The following are Plums from the Morecambe Christmas Pudding:

	£	s.	d.
100 Belt Punches		1	1
50 Brass Exhaust Whistles		6	6
50 Large Twisted Horns, deep note		4	11½
50 pairs Wool-lined Gauntlet Gloves		4	11½
20 Second-hand Lamps ..... from		7	6
100 New Lamps ..... from 5/- to		50	0
30 Silver-plated Swan-neck Seatpillars		2	9
100 Silver-plated Long Handle-bars		4	11½
100 Amac 1910 h.b.c. Carburetters		19	9
100 B. & B. 1911 h.b.c. (6/- allowed for old) Carburetter	1	10	0
11 Second-hand Matchless Spring Forks		12	6
24 Harrison Backrests		10	6
4 Second-hand XL'All Spring Forks		12	6
24 Separate Generator Lamps		18	0
80 Trembler Coils, second-hand		7	6
75 Non-tremblers, second-hand		6	0
44 pairs Heavy Leather Gauntlet Gloves		3	6
100 Triumph Reducing Compression Domes		2	2
25 1909 Triumph Valves, complete		4	6
5,000 Vulcan Belt Fasteners ....post free			11½
100 Valves to suit all machines		2	9
500 E.I.C. Plugs, 2/9 size		1	6
400 E.I.C. Plugs, 5/6 size		2	9
100 Bray's Burners			8½
50 Chemico Carbide Carriers		1	10½
90 Rubber Goggles, with two glasses		1	10½
12 28×2¼ and 2½ A Won Covers		15	6
36 assorted New Covers ..... from		10	6
60 Dunlops, wired-on, 28×2¼		10	6
48 Reflex, 24×2¼		12	6
100 Tubes, new, all sizes ..... from		7	6
30 Butt-ended Tubes, S.H., assorted		8	6
80 Whittle Belts, all sizes..from, per foot		1	0
50 Lengths Shamrock-Gloria 1in. Belting		12	6
40 Odd Bags, various makes ..... from		3	6
50 pairs Horn Grips		2	5½
24 Watches, with holder		3	11½
6 Second-hand F.R.S. Lamps		24	0
5 Second-hand Lucas Lamps		22	6
40 S.H. Bosch, Lodge, Oleo, and L.M. Plugs, guaranteed right		2	0
12 Leather and Steel-studded Bands, 26×2¼		19	9
12 Jones' Speedometers, S.H. ..... from 30/- to	2	10	0
1 Musical Horn		7	6
50 Switches		2	3
6 S.H. Nab Seat-pillars		7	6
1 Extra Big Lucas Horn		7	6
20 Cowey Speedometers, S.H. 47/6 to		3	0
24 Millennium Stands		2	6
12 Leather Coats		10	6
12 Mudflaps ..... 1/6 and		2	9
1 Veeder Cyclometer		7	6
5 Safes (Walker's) ..... from	3	0	0
15 Dry Cells, S.H.		4	6
100 Tank Control Carb.		6	6
2 Tube Case		2	6
1 pair Couplers, Liberty	1	5	0
1 pair Couplers		17	6
1 Large Oil Lamp		4	6
50 Pumps		1	0
24 Assorted Saddles		12	6
1 Magneto (not guaranteed)		19	6
1 Accumulator and Coil, Box		2	9
1 Wood Belt Box		2	6
20 Car Coils ..... each		10	6
50 Suits Winter Waterproofs	1	5	6

£300 worth of good things besides motor cycles. Why buy new goods, when I can supply second-hand at half the price and just as useful?

C. H. HITCHEN,

THE STOCK HOLDER,

Euston Rd., MORECAMBE.

Telephone 112. Wires: "Motor."

MOTOR BICYCLES FOR SALE.

STERLING'S Motor Exchange, 230, Clapham Rd., Stockwell, S.W. Tel.: 1730 Brixton.

STERLING'S for 1911 Triumphs, Bradburys, F.N., V.S., all models in stock.

STERLING'S for Bradburys; no extra for extended payments; 1911 machines actually in stock.

STERLING'S.—1909 Triumph, Clincher tyres, fine condition; £31; all accessories.

STERLING'S. 1909 Triumph, clutch model, Palmer cords, practically new; £36.

STERLING'S.—1910 Triumph, Clincher studs; bargain, £36 10s.

STERLING'S.—8h.p. Minerva, fine condition; £19; all spares.

STERLING'S.—Triumph, 3½h.p., good condition, all accessories, h.b. control; £23.

STERLING'S.—Minerva, 3 h.p., new condition, Palmer cords; £14; h.b. control.

STERLING'S.—3½h.p. Quadrant; bargain at £13 10s.

STERLING'S.—Two-speed F.N., 1910, 2½h.p., new tyres; £29.

STERLING'S.—1911 model F.N., 6h.p., shop-soiled; £44; all spares.

STERLING'S for good second-hand machines, all in guaranteed order.—230, Clapham Rd., S.W. Tel.: 1730 Brixton.

1911 Humbers, two speed and lightweight models, from stock; no waiting.—Bel w.

1911 Bradburys, all models, from stock; Exeter and back models.—Below.

TRIUMPHS, free engine models, from stock; the much fancied.—Below.

1910 Douglas, £32; 1910 Motosacoche, £28; 1½h.p. F.N., magneto, £15; 2½h.p. Brown, Chater-Lea, £7 15s.; 2½h.p. Ariel, £12; 1910 Triumph, new heavy tyres, £38 10s.; 3½h.p. N.S.U., magneto, two-speed gear, £22; 1909 two-speed Humber, Whittle, £30; twin magneto Rex £18 10s.; 1¾h.p. Minerva, 70s.; 3h.p. Werner 90s.; 5h.p. magneto twin Sarolea, £20. Cash, deferred or exchange.—Stamford Hill Motor Co., 128, High Rd. Tottenham. 'Phone 1982.

WANDSWORTH Motor Exchange, Ebner St., Wandsworth, have great bargains this week.—Below.

WANDSWORTH.—Minerva, 3½h.p., m.o.v., h.t. magneto, h.b.c., spring forks, good order; £16 10s.

WANDSWORTH.—Roo 5-6h.p. twin, h.t. magneto, free engine clutch, perfect order; £23 10s.

WANDSWORTH. F.N., 1908, 4½-5h.p., 4-cyl., h.t. magneto, spring forks, perfect; £19 19s.

WANDSWORTH.—Moto-Reve, latest 1910, 2¼h.p magneto, Druids, nearly new; sacrifice £26.

WANDSWORTH.—Rex, late 1909, 5-6h.p., twin, magneto, two speeds, practically new; £32 10s.

WANDSWORTH.—Bat, 3½h.p., magneto, £18 10s.; exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth.

EAGLES.—Triumph, 1909, free engine model, perfect condition, all accessories; £37 10s.

EAGLES.—N.S.U., 3½h.p., Model de Luxe, 1910, Bosch magneto, spring forks; £32.

EAGLES.—Enfield 2¼h.p. twin lightweight, 1910 slightly used, Bosch magneto, M.O. valves, speedometer, all accessories; £28 10s.

EAGLES.—Triumph, 1909, standard, Dunlop tyres perfect condition, all accessories; £32.

EAGLES.—Kerry, 2¾h.p., vertical engine, low built, Palmer tyres; £9 10s.

EAGLES.—N.S.U., 3½h.p., magneto, spring forks, h.b. control, 1in. belt, 26 by 2½ P.U. tyres; £22 10s.

EAGLES.—Indian, 5h.p. twin, 1910, green finish, competition winner; £42, as new, exchange lower power.

EAGLES.—We have a few brand new N.S.U.'s, fitted with magneto, spring forks, m.o.v., h.b. control, finished in latest style; 3h.p., £27; 3½h.p., £31; two-speed gears, £5 15s. extra; exchanges entertained; deferred payments.

EAGLES.—Any of the above can be had on approval; deposit system.

EAGLES and Co., High St., Acton, N.S.U. West London district agency.—Early delivery of 1911 models; liberal allowances now for machines in part payment.—Tel.: 556 Chiswick.

CLEMENT-GARRARD Lightweight, just overhauled, machine and tyres good as new; first comer, £8 10s.—Bunting, Wealdstone.

1909 Triumph, fully equipped, and been overhauled; £33.—Bunting, Wealdstone.

1908 Triumph; this is one of the renowned 1908 models; bargain, £27 10s.—Bunting, Wealdstone.

5h.p. Vindec, late 1909, handle-bar control, Rom, excellent condition, spares, tools, lamp; £27.—Nest, Warren Av., Charlton, S.E.

MOTOSACOCHE, 1¾h.p., magneto, late 1909, condition equals new; £23.—B. B. McKean, Abbotsfield, London Rd., St. Albans.

The following are a few Speaking Points about my Stock:

MAGNETO MACHINES.

TRIUMPH, 1910, free engine, fine model	£48	0
TRIUMPH, 1910, free engine	£46	0
TRIUMPH, 1910, as new	£42	10
TRIUMPH, 1910, grand condition	£40	0
TRIUMPH, 1910, good order	£38	0
TRIUMPH, 1909, first-class condition	£38	0
TRIUMPH, 1909, grand order	£37	0
TRIUMPH, 1908, fine sidecar machine	£32	0
TRIUMPH, 1908	£29	10
TRIUMPH, 1907	£26	0
ROYAL ENFIELD, 1910, as new	£30	0
ROYAL ENFIELD, 1910, fine order	£28	10
DOUGLAS, 1910	£32	0
DOUGLAS, 1910	£30	0
MOTO-REVE, 1910, shop-soiled	£33	0
MOTO-REVE, 1910, as new	£30	0
MOTO-REVE, 1909½, first-class condition	£26	0
MOTO-REVE, 1909½, beautiful order	£25	0
MOTOSACOCHE, 1911, free engine, as new	£32	0
MOTOSACOCHE, 1910, free engine	£30	0
MOTOSACOCHE, 1909, fine order	£27	10
MOTOSACOCHE, 1909, good machine	£25	0
N.S.U., 5 h.p., twin, two-speed gear	£27	10
N.S.U., 5 h.p., twin, two-speed gear	£30	0
N.S.U., 5 h.p.	£27	0
N.S.U., 5 h.p.	£25	0
N.S.U., 1910½, two-speed gear	£40	0
N.S.U., 1910, two speed gear	£38	10
N.S.U., 3½ h.p.	£25	0
HUMBER, 1910, two-speed gear	£38	0
HUMBER, 1909½, two-speed	£35	0
HUMBER, 1909½, two speed gear	£32	10
BRADBURY, 1910, two-speed gear	£39	0
ROC, 5 h.p., twin, two-speed gear	£35	0
REX, 1909, 5 h.p., twin, 2-speed gear, grand order	£38	0
REX, 5 h.p., twin, free engine	£28	0
REX, 5 h.p., twin	£25	0
REX, 5 h.p., twin, free engine	£25	0
REX, 1910½, 3½ h.p., two-stroke, T.T.	£32	0
BROWN, 1909, 3½ h.p., grand model	£30	0
BROWN, 1909, 3½ h.p.	£27	10
MINERVA, 3½ h.p., grand model	£27	0
MINERVA, 3½ h.p.	£25	0
MINERVA, 3½ h.p., grand model	£22	10
SINGER, 3½ h.p.	£22	10
V.S., 1910, 7 h.p., two-speed gear	£50	0
SCOTT, 1910, fine order	£45	0
SCOTT, 1910, good model	£42	10
PHELON & MOORE, 1909½, newly enamelled, overhauled	£45	0
CENTAUR, beautiful order, chain-driven	£27	10
REX Lightweight, useful model	£17	10
SIMMS, 3½ h.p.	£18	10
HUMBER, 2¾ h.p.	£17	10
SINGER, 2¾ h.p.	£18	0
CLYDE, 3½ h.p.	£17	10
F.N., 2¾ h.p., nice little model	£17	0
F.N., four-cylinder, grand model	£35	0
F.N., four-cylinder	£30	0

All the above machines are waiting your inspection in Morecambe. Besides these, we have others, also FIFTY ACCUMULATOR MODELS. Our stock is always the largest and most varied in the country.

MORECAMBE SIDECARS.

Fifty to clear, at £4 15s.

PROMPT DELIVERY OF

1911 Models.

We have in Morecambe or for almost immediate delivery Motosacoche, Moto-Reve, Douglas, Enfield, P. and M., Scott, Bradbury, Humber, Bat, Matchless, and await your esteemed orders, on cash or exchange terms, for all and everything. You may go further, you cannot do better, and may very easily do worse. Write for anything and everything you may want to buy; lists awaiting your acceptance; write to-day. Read the other column.

Collier's Motories,

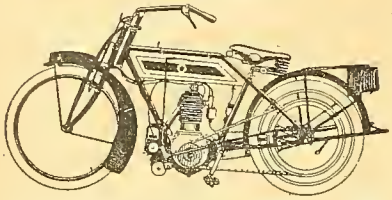
Westgate, Halifax, England.

NOW THE holi-DAY'S OVER YOU WANT A MOTOR.

SEE BELOW.

BRAND NEW 1910 3½ REX,

GUARANTEED.



Complete with Tools, carrier, stands, etc., **£42.**

3½ h.p. 1910 Speed King REXES	from £39 10
5 h.p. 1910 Speed King REXES	from £42 10
5 h.p. Twin Tourists	£45 0
3½ h.p. Tourist REX, with plate clutch	£47 0
5 h.p. Twin Two-speed REX DE LUXE ..	52 Guineas
5 h.p. Twin Two-speed REX DE LUXE, M.O.V.	54 Guineas
Special 3½ h.p. REX, 84½ × 89, with pedalling gear. Full description on request	£39 10

THE ABOVE ARE ALL BRAND NEW.

Two-cylinder w.c. Daimler Engine, with carburetter	£18 10
3 h.p. Noble, M.O.V., detachable valve seats	£4 10
2½ h.p. Humber, a.c., good order	£3 0
2½ h.p. Eclipse in good order	£3 0
4-5 h.p. Coronet, w.c., M.O.V., new	£6 15
2¾ h.p. Engine Set, part finished	£1 15

WE STOCK WHITTLE BELTS. ALL SIZES

SPECIAL CLEARANCE.
26 × 2in. Cootinentals, **17/6**; 26 × 2¼in..... **22/6**

20 × 2in. Clincher Covers, rubber-studded	25/-
26 × 2¼in. Clincher Covers, rubber-studded	27/6
Clipper-Reflex Beaded-edge Covers, 26 × 2in.....	17/6
Clipper-Reflex Beaded-edge Covers, 24 × 2¼in.	10/6
28 × 2in. Calmon and Clincher Covers	17/6
New Inner Tubes, all sizes ..... each	7/6
New Shamrock-Gloria Belting, 8ft. 6in. × ¾in.	11/6
1910 Rex SpringsForks, **29/6**; 1909 pattern	19/6
Forecar, less seat and tyres, fits twin Rex	17/6
Mabon Clutch, nearly new, complete, fits 1909 Rex	39/6
20 hour Fuller Accumulators, uncharged	10/9
Few nearly new 1in. Whittle Belts .... per foot	2/9

F.N., magneto, four-cyl., goes splendidly	£19 10
N.S.U. Twin 4 h.p., two-speed, and Sidecar ..	35 Guineas
N.S.U. 3½ h.p., 2¼in. tyre, B. and B. carb., magneto	£22 0
N.S.U. 3½ h.p., M.O.V., magneto, Whittle	£19 19

FINE STOCK OF REXES, 1905 TO 1910.
LISTS FREE.

INDIAN 1910 5 h.p., beautiful, trials only	£46 15
V.S. 5 h.p. Twin, "Greybeard," Peugeot engine..	£29 19
HUMBER, 3½ h.p., two speeds, late type, Whittle	£33 10
HUMBER 3½ h.p., accumulator, extra good.....	£11 10
TRIUMPH, 1908, 3½ h.p., abeauty	£30 0
QUADRANT 3½ h.p., accumulator, spring forks, 26in. wheels	£16 16
QUADRANT 3 h.p., vertical, Vaurscarburetter..	£9 0
QUADRANT 3 h.p., long bars, low	£7 19
QUADRANT Trike, 3 h.p., B. and B., cheap lot..	£8 0
MINERVA 3½ h.p., B. & B.magneto	£19 10
BROWN 3½ h.p., two-speed, M.O.V., h.b. control	£19 19
BROWN 3 h.p., footboards, specially fitted engine	£11 10
CENTAUR 3½ h.p. M.O.V., Dunlop non-skid	£17 10
BRADBURY 1907 3½ h.p., photo stamped covelope	£15 15
BRADBURY 2½ h.p., vertical, spray, Amac	£7 17
BRADBURY 2½ h.p., at a right price	£5 15
PHELON AND MOORE 2¾ h.p., two speeds	£18 10
WERNER 4 h.p., two-cylinder, magneto, etc. ..	£19 0
WERNER, 3½ h.p., vertical, low, easy starter....	£10 10
SINGER 3 h.p., vertical, V belt, h.t. magneto....	£15 10

WE HAVE NO ROOM for SIDECAR BLOCK, but we shall be pleased to demonstrate OUR LATEST patterns to you if you WILL CALL UPON US. Price £6 6s. BEST SPRINGING. EASIEST TO FIT. EASIEST TO DETACH, in fact every desirable feature incorporated.

£45 10s., 1910 Two-speed SCOTT, two-stroke, kick starting, easy starter, powerful.

MOTOR BICYCLES FOR SALE.

1910 Rex, 3½h.p., two speeds, brand new, unridden; £43, cost £59.—Matthews, pawnbroker, W. Croydon.

2¾h.p. F.N., splendid condition, new accumulator; gennine bargain; nearest £10.—43, Bond Rd., Surbiton.

CROYDON.—Churchill and Co., Park St. and Whitehorse Rd., sole district agents for Bradbury motor cycles.

5h.p. Rex, 1909, in good condition, fitted with Mabon free engine clutch; accept £28.—Wrench's, 388, Euston Rd.

5h.p. Rex 1909 de Luxe, two speeds, excellent order; accept £32, with sidecar £37 10s.—Wrench's, 388, Euston Rd.

3½h.p. Chater-Lea, Fafnir engine, good running order; £15, or nearest offer.—Lewer, Oakfield, London Rd., Dorking.

TRIUMPH, 1909, 3½h.p., recently overhauled, warranted good as new; £32.—H.F.C., 7, Croom's Hill, Greenwich.

3h.p. Humber, chain driven, good running order; must sell; seen by appointment; £6 10s.—G. Coles, 194, Commercial Rd., E.

INDIAN, green, 5h.p., 1910, new condition throughout; £44.—Dr. Kelsey, Princes St., Harrogate. Machine in London.

5h.p. Twin Genuine Peugeot, Truffault forks, Brooks non-skid back; £12, or offer.—Harvey, Hudson, and Co., South Woodford.

COOPER'S 3½h.p. Triumph, Palmers, complete with lamp and spares, guaranteed perfect; 28 guineas.—Cooper, Workhouse, Lewisham.

DOUGLAS, late 1902, re-enamelled, new rings, new valves, etc., like new; £26, lowest.—Crafter, Green Street Green, Orpington, Kent.

3h.p. Calvert, handsome, to be sacrificed; no reasonable offer refused; after 7; Saturday 2 till 6.—Watson, 19, Bangalore St., Putney.

SCOTT, 4h.p., new August, 1911 improvements, numerous spares; £50, or exchange 6h.p. two-speed J.A.P.—Birch, Aldenham, Watford.

2½h.p. Quadrant, spring forks, every accessory, nice condition, guaranteed sound running order; £5 18s.—12, Market Sq., Horsham, Sussex.

TRIUMPH, two months old, slightly used, with horn, lamp, spare parts; £40.—Liddiard, 86, York Mansions, Prince of Wales Rd., Battersea.

CHATER-LEA-MINERVA, 2h.p., h.b.c., vertical, low built; £8, or will exchange with cash for higher power.—Taylor, 69, Grove Lane, Camberwell.

3h.p. Kerry, 1910 B. and B., new Michelins, low built, perfect condition guaranteed; £11; push bike part.—Sinclair, Walton Rd., East Molesey.

1910 Standard Triumph, condition as new, ridden 1,000 miles, lamp, and all spares; £40; owner buying car.—Lynwood, Bessborough Rd., Harrow.

5h.p. Rex, accumulator ignition, in thorough good order, two belts, two accumulators, lamp, and accessories; £17 10s.—12, Westward Rd., Chingford.

3½h.p. Imperi, handle-bar control, good tyres, everything guaranteed sound, ready for season's riding; £12, or offer.—34, Meanley Rd., Manor Park, Essex.

5-6h.p. Kerry Twin, magneto in tank, two-speed gear, chain drive, French grey, magnificent machine, as new; £27 10s.—Taylor, motorist, Westerham, Kent.

IF You Want Bargains in second-hand motor cycles, you can get them at Wauchope's.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C., just off Ludgate Circus.

6h.p. Twin Rex, Bosch, h.b.c., spring forks, cantilever, Osborne four-speed, free engine, splendid condition; £24; lower power part.—Stewart, Market Sq., Horsham, Sussex.

PHELON and Moore, Ltd., 12, Mortimer St., W., have for disposal several second-hand P. and M.'s, with and without sidecars, all in splendid condition, and in perfect running order.

3½h.p. Zenith, J.A.P., very fast, will do 60, medal winner, world's record breaker, recently overhauled, pedigree machine; bargain, £30.—Smith, Oatlands Grange, Weybridge.

3½h.p. Bat, spring frame; 3½h.p. Excelsior, re-modelled; both good running order, new accumulators; sell either cheap. £10 10s.—Thomas Martin, 51, Manaton Rd., Peckham Rye.

3¼h.p. Rex, good running order, overhauled October, Longnemare, Clincher, studded Michelin, new spare accumulator; £9 10s.—Box L1396, *The Motor Cycle* Offices, 20, Tudor St., E.C.

PREMIER 1910 5-7h.p. Motor Cycle, new August, scarcely soiled, spares, lamp, horn, etc.; cost £61; climb anything; any trial given; price £50.—S. G. Hills, 11, London Rd., Sevenoaks, Kent.

TRIUMPH, 1909 (late), just been thoroughly overhauled, perfect condition, headlight, horn, spare valve, and all tools, guaranteed; £33 10s.—Goodmayes Motor and Cycle Works, Goodmayes.

5h.p. Twin Alcyon, fine running order, just the machine for sidecar work, plenty power, starts while walking with it; must sell; best offer over £10 gets it.—Annanville, Landgrove Rd., Wimbledon Park.

Size: 6½" × 4½" × 2½" overall.

Price 6/6 each.

SUCCESS

AGAIN FOR THE

HELLESEN

DRY BATTERIES

IN THE

London-Exeter

322 miles in 24 hours.

TWO RIDERS OG TRUMP-J.A.P.S

GAINED

GOLD MEDALS

EACH USED A SINGLE

"H.H." Hellesen "FLASH"

Dry Battery Throughout!

AND NEVER HAD A MISFIRE!

WHICH IS

CONCLUSIVE PROOF

OF

RELIABILITY.

Write to-day for new 1911 Catalogue, dealing with this ideal system, to the

SOLE SELLING AGENT,

A. H. HUNT,

115-117, Cannon Street, E.C.

MOTOR BICYCLES FOR SALE.

2½h.p. J.A.P., 19in. Chater frame, 26in. wheels, B.B., handle-bar controlled. Druid forks. Brooks B105. drip lubrication; £10 5s.—1, Gascoigne Rd., Barking.

TRIUMPH, late 1907, magneto, spring forks, 1910 handle-bar control carburetter, 1910 adjustable pulley, in splendid condition, engine recently overhauled by makers; £25.—Wallis Beer, 28, Victoria Rd., Deal.

MUST be Sold.—3½h.p. M.M.C., grey, long, low, spring forks, Davison's tank, footboards; 2½h.p. Buchet, low, good going machine, new Dunlop, new Stanley-Dermatine belt.—681, Salisbury House, E.C.

1910 Triumph, delivered July, new condition, only ridden 500 miles, enamelling and plating perfect, tools, box of magneto spares, etc.; £36, no offers; trial by appointment.—6, Tregunter Rd., South Kensington.

1907 3½h.p. Minerva, spring forks, footboards, low, enamelling and pluring sound, engine bearings and compression perfect, tyres uncut, new mirror, lamp, horn, spares; trial; £14.—229 Burdett Rd., London, E.

DOUGLAS, 1909, splendid condition, lamp, horn, tools, etc., Druids, carrier, stand, complete machine, £27 cash; also 3 guinea special overalls and cap cover, good condition, £1 1s.—Mac, 190, Argyle St., Stoke Newington.

1910 Triumph, 3½h.p., had scarcely any use, in magnificent condition, tools, and accessories; £42; would entertain exchange.—Douglas and Oliver, Ltd., 90-91, High Holborn, W.C. 'Phone 2387 Holborn. T.A.: Exhaust, London.

4h.p. 1909 No. 6 Chater-Lea-J.A.P., with 1910 Bosch and Brown and Barlow, Druids, Palmer and Michelin 2½ tyres, Brooks B105, enamelling as new fast and reliable, spares, etc.; £28 cash.—Busbridge, Grasmere, Plumstead.

DO You Want a Motor Cycle?—If so, send requirements to the Notting Hill Gate Cycle Mart, 108a, High St., Notting Hill Gate, and we will send you particulars of our stock which would suit you. Large selection always available.

3½h.p. Bradbury, only been in use three months, and not been driven 1,000 miles, in beautiful condition; £38; would entertain exchange.—Douglas and Oliver, Ltd. 90-91, High Holborn, W.C. 'Phone 2387 Holborn. T.A.: Exhaust, London.

MOTO-REVE, 1910, twin, adjustable pulley, carrier, Whittle belt, Continental tyres, paint and plating as new, new separate generator lamp, many extras fitted; any trial or examination; getting sidecar.—Motorist, 10 Cavendish Rd., Brondesbury, London.

3½h.p. Rex-Antoine, fitted with B100 saddle, Amac, spring forks, horn, handle-bar mirror, switch, lamp, generator, S.N.P. stand, footrests, on road since August, fast and good hill-climber, condition like new; sell or exchange.—F. Kesterton, 13, Priory Park Rd. Kilburn.

N.S.U., 2½h.p., twin, late 1910, better than new, run only 200 miles, new Michelin non-skid, spare new Peter-Union, belt lamp separate generator, tools, accessories, waterproof suit; sacrifice £36; reason selling health; any trial.—Swainston, 89, Southfield Rd., Bedford Park, Chiswick, W.

1909 Triumph, in splendid order, lamp, horn, numbers, £32; 1909 Humber, two-speed, in perfect running order, £27 10s.; 1910 Tourist Trophy Triumph, practically new a real flier, £37 10s.; 1911 Triumphs, Bradburys, Premiers, and Endfields in stock.—Batchelor, Clarence St., Kingston.

SECTION IX.

Somerset, Devon, Dorset, and Cornwall.

1908 4-cyl. F.N., perfect, £20; 2½h.p. Moto-Reve a bargain, £23.—P. B. Adams, Crediton.

N.S.U., 3½h.p. model de luxe, 1910, as new, not done 100 miles; £32.—Reynolds, Broadwey, Dorset.

FOR Sale, Triumph motor cycle, magneto, in good going order; £19 10s.—H. Dodimead, Shepton.

3½h.p. L.M.C., 1910, two speeds and free engine, non-skid tyres, as new; £35.—E. A. Miller, Crewkerne.

SECTION X.

Scotland.

TRIUMPH, magneto, good condition, spare variable; £18.—Scobbie, 59, Mollinsburn St., Springburn.

EXCEPTIONAL Bargains in reliable second-hand motor cycles always at Alexander's Motor Exchange, Edinburgh.

TWIN Rex, 6h.p., thoroughly overhauled, very fast and reliable, good Palmer tyres; accept £14.—Hamilton, 46, High St., Paisley.

6h.p. N.S.U., 1908, B. and B. 1911 carburetter, new Whittle belt lamp, and generator, spares and tools, £28; also 3½h.p. Rex, in first-class condition, new Palmer cord back tyre, £10.—Russell, 97, High St., Paisley.

1909 3½h.p. Triumph, perfect condition, fitted with new 1911 Roc two-speed gear and free engine, handle-starting, new back Palmer cord tyre, new belt, lamp, generator, spares, accessories; £40.—Hutcheon, 3, East Register St., Edinburgh.

SCOTLAND'S Largest Motor Cycle Firm.—Rex, V.S., Indian, Moto-Reve, Phelon and Moore, Zenith, Douglas, Roc, Griffon, B.S.A., N.S.U., Norton, and Lincoln Elk; we stock all these, and can supply any other make.—Alexander's Motor Exchange, Lothian Rd., Edinburgh.

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EASTERN GARAGE

COY.

During the coming season we shall carry a representative stock of all the best motor cycles. Our large contracts with manufacturers enable us to give **definite dates for delivery** of machines such as

PHELON & MOORE
MATCHLESS
BRADBURY
TRIUMPH
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REX
F.N.
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We are Sole Essex Agents for

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We will quote you an allowance price for your old machine, which cannot fail to satisfy you, and

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Well equipped workshops and careful attention to customers' requirements have secured for us the appointments of official repairers to

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ROMFORD ROAD, FOREST GATE, E.

Telephone: Stratford 10. Telegrams: "Egaraco, London."

MOTOR BICYCLES FOR SALE.

SECTION XI.

Ireland and Isle of Man.

1910 F.N., 2½h.p., lightweight, two-speed, five months in use, perfect, 26 guineas; also 1910 Scott, 4h.p., special, offers wanted.—Launeview, Killorglin, Co. Kerry.

TRICARS FOR SALE.

9h.p. Royal Riley Tricar, in first-class condition, tyres excellent, all spares, etc.; trial; £45.—58, George St., Camberwell.

CHATER-LEA Tricar, 6-8h.p. twin Stevens engine, w.c., three speeds, reverse, open frame; sacrifice, £26.—1, Ebner St., Wandsworth.

ARIEL-MINERVA Tricar, 4½h.p., two speeds, free engine, good condition; £25, or exchange for lightweight and cash.—17a, Old Gravel Lane, E.

6h.p. Antoine Tricar, wheel steering, open frame, Chater-Lea 2-speed gear b.x, finished grey, upholstered green, in first-class condition; £23 10s.

4½h.p. Auto Motor Forecar, two speeds, handle starting; £14 10s.—The Hammersmith Motor Exchange, 178a, King St., Hammersmith. 'Phone 716 Hammersmith.

3½h.p. Raleighette, w.c., two speeds, coach seat, chain drive, gauges, complete, and in splendid order; £25.—Henshaw, Wheelwright, Stockport.

6h.p. Tricar, coachbuilt, two speeds, foot clutch, w.c.; any trial; magneto; £36, or exchange.—Lee, 21, Devonshire St., Cambridge Rd., Whitechapel, London.

4¼h.p. Phœnix Trimo, coach-built, pan seat, magneto, two speeds, chain drive, Palmer cords, perfect condition, fast and reliable; £25.—249, Park Rd., Liverpool.

TRICAR, Riley, three-speed, reverse, free engine, water cooled wheel steering, three lamps (electric), accessories, requires overhaul; £20.—Richardson's Motor Wks., North Finchley.

4½h.p. Chater-Lea Tricar, water-cooled, Stevens engine, Palmers front, studded Continental back, wing mudguards, mahogany footboards, sound running condition; £17.—Bishop, Highfield, Epsom.

LATEST 3½h.p. Raleighette, two speeds, water cooled, open frame, climb anything, absolute new condition throughout, not run 800 miles; sacrifice, £25, take magneto cycle exchange.—R. Else, Leawood, Matlock.

4½h.p. Riley, water-cooled, free engine, £18; 3½h.p. Triumph, water-cooled, cane body, £18; 6h.p. Litette, twin, two-speed magneto, free engine, £35.—Stamford Hill Motor Co., 128, High Rd., Tottenham. 'Phone 1982.

6h.p. Tricar, Fafnir twin engine, two-speed gear, two ignitions (Bosch magneto and accumulator), Palmer cord tyres, spares; a bargain, £35, or exchange Triumph motor cycle.—Turvey and Co., sole agents for Triumphs and Humbers, The Motor House, Sunderland.

LUXURIOUS Eagle Tandem Tricar, 6½h.p. De Dion engine, two speeds, 750 by 85 tyres, wheel steering, colour engineers' grey, numerous spares; this machine has been well cared for and driven only by owner, thoroughly reliable; expert examination invited; cost £160, accept £50; seen by appointment.—Whittaker, 33, Birley St., Blackpool.

TRICAR, open frame, wheel steered, 3½h.p. water-cooled Fafnir engine, Chater-Lea two-speed gear box, clutch, etc., chain drive, electric and gas lamps, Palmer cord tyres, butt-ended tubes, also spare covers, tubes, and chains, tools; great bargain; climbs Kingston Hill on top gear; £22 10s., or near offer.—Olphert, jeweller, Barnes, S.W.

SIDECARS AND FORECARS.

TRIMO Forecar, Palmer tyres, cane seat; £4 10s.—Jones, draper, Fordingbridge.

RIGID Sidecar, 26in. tyre, guaranteed perfect; £2 7s. 6d.—1, Gascoigne Rd., Barking.

SIDECARS, brand new, beautifully upholstered, fit any make; £3 10s.—Rey, 5, Heath St., Hampstead.

MILLFORD Rigid Sidecar, in good condition; £4; exchange kit bag.—Buckeridge, optician, Calne, Wilts.

FARRAR'S.—Sidecars, best, safest, finest value, Hutchinson or Continental tyres; £5 5s.—Farrar, Hopwood Lane, Halifax.

MILLS-FULFORD, rigid, new £9 9s., fitted with heavy tyre; sacrifice £7.—Goodmayes Motor and Cycle Works, Goodmayes.

£6 secures £10 10s. Montgomery flexible cane and green leather sidecar, not run 100 miles.—Crichton, Bonner's Field, Sunderland.

STANDARD 8 Guinea Model Sidecar, 1911, Chater-Lea fittings, Continental tyre; 5 guineas.—Matthews, pawnbroker, W. Croydon.

6h.p. Antoine and sidecar; £17 10s.—The Hammersmith Motor Exchange, 178a, King St., Hammersmith. 'Phone 716 Hammersmith.

BRAND New Near Side Rigid Sidecar, plated telescopic joints, magnificent art cane body, beautifully upholstered with apron and cushion; 7 guineas; photo; approval.—229, Burdett Rd., London, E.

SIDECARS AND FORECARS.

RIGID Sidecar, £3; ditto, £4 10s.—The Hammersmith Motor Exchange, 178a, King St., Hammersmith. 'Phone 716 Hammersmith.

DE Luxe Sidecars, beautifully finished to fit any machine; £5 5s.—Send for illustration to the North Wales Motor Exchange, Wrexham.

SIDECARS.—Wholesale and retail manufacturers; trade specially catered for.—Middleton's, Watson St., Newington Green, London, N. 2126 Dalston.

MONTGOMERY Sidecar, coach built, plated springs, tyre, tube, upholstery as new; £5 10s.—Rawlings Bros., Motor Garage, Houghton-le-Spring, Co. Durham.

BEWARE of Fraudulent Advertisements in second-hand columns trading on popularity of genuine Chater-Lea sidecars and frames; examine all parts carefully, and when in doubt write Chater-Lea, Golden Lane, London.

SIDECARS.—Don't forget that ours is the best on the market, no matter what the price; best wicker body, extra strong tubing, 4in. mudguard, 26 by 2¼ Michelin tyre, £5 5s.; art cane body, £6; free gift of a 12s. 6d. back rest for one month only; trade supplied.—Jack Cairns, London Rd., Preston.

SIDECAR COMBINATIONS.

7 h.p. J.A.P., Roc two-speed, Chater sidecar, as new, Cowey; £40.—Varney, 40, Angel Lane, Stratford.

TWIN Rex, magneto, four-speed, and sidecar; £25.—Stamford Hill Motor Co., 128, High Rd., Tottenham. 'Phone 1982.

TRIUMPH, 3½h.p., late 1908, and sidecar, splendid condition; £35, or offer.—Atkinson, plumber, Mapplewell, near Barnsley.

5 h.p. Twin Rex and sidecar, perfect condition, tyres excellent, 1908, guaranteed; sacrifice £17.—44, Liverpool Rd., Stoke-on-Trent.

IMPROVED 1909 Twin Rex, two-speed, and castor wheel sidecar, with lamps and many spares; £35.—Leycester's Lodge, Kenilworth.

5 h.p. Twin Rex, 1908, Roc two speeds, magneto, B. and B. carburetter, complete with Montgomery flexible sidecar; £23.—3a, Bridge St., Cambridge.

HUMBER, 1911, two-speed, and sidecar, with accessories, new; wanted, 1910 or 1911 clutch Triumph.—Box 6,312, *The Motor Cycle* Offices, Coventry.

V.S., 5h.p., two-speed, new engine October, 1910, Clair, latest fitments, perfect, Millford sidecar, all accessories, spares, complete; sacrifice £37.—Grocer, Wallneuk, Paisley.

TRIUMPH (Fafnir engine), and sidecar, B. and B., Michelins, Whittle, whole machine perfect; bargain, £23 cash, no offers.—Harold Addis, St. Stephen's Rd., Hounslow.

5-6h.p. N.S.U. Twin, magneto and free engine, 24 by 2½ wheels, spring front forks, handle-bar control, complete with sidecar; a bargain, £25 10s.—Taylor, motorist, Westerham, Kent.

PHELON and Moore, 3½h.p., 1910, spares, F.R.S. lamp, Cowey speedometer, in good condition, with Millford rigid sidecar, Kempshall tyres, and butt-ended tubes; £52, or near offer.—Box L1,386, *The Motor Cycle* Offices, 20, Tudor St., E.C.

MOTOR TRICYCLES AND RUNABOUTS.

3 h.p. Quadrant Tricycle, two speeds; £5 10s.—3a, Bridge St., Cambridge.

RUNABOUT, 6h.p., open frame, bucket seat, wheel steering, two speeds; £17; motor bike part.—111, Walton Rd., East Molesey.

THE 1911 2½h.p. Two-speed Shaft-driven F.N. Tricycle, with the latest refinements; prompt delivery; full particulars.—Manning, St. John's, South End Rd., Hampstead, London.

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TOURING Car, late model, minus engine; 30 guineas.—Student, 2, Studley Rd., Clapham.

BELSIZE, 14h.p., 5-seated, tonneau, perfect; 35 guineas.—W. Swan, Stockwell Green, S.

20 h.p. 4-cyl. Daimler, side entrance, cardan drive, dual ignition; £100, smaller car part.—128, High Rd., Tottenham.

PEUGEOT, 6h.p., 2-seater, live axle, wind screen, lamps, splendid condition; £27 10s.—60a, Trinity Rd., Upper Tooting.

MAUDSLAY Landaulet, 16-20h.p., seats five inside, highly recommended; £95.—Dr. Sutton, Strathville Rd., Wandsworth, S.W.

5½-6h.p. Humberette 2-seater Car, in very good order, with lamps, horn, pump, tools, etc.; £24.—Apply, H. Cosens, 8, Airlie Gardens, Kensington, London.

LEON BOLLEE, 16-20h.p., limousine, seats five inside, dual ignition, gate change, magnificent car; 125 guineas.—Mrs. Bishop, 43, Mayflower Rd., Clapham.

P.M.C. Motorettes, the neatest little vehicle on the road, inexpensive to run, comfortable, quiet, early delivery.—Perfecta Accessory Co., 174, Upper Richmond Rd., Mortlake, S.W.

FOR Sale, 2-seater Riley car, 9h.p., spare wheel and lamps complete, price £45; also motor cycle, 2½ h.p., £10; both in first-class condition.—Apply Barrass and Dixon, South View, Tantobie, S.O.

Premier Motor Company, Ltd.

Quickest Delivery of
TRIUMPH, REX, N.S.U., F.N., SCOTT, ARIEL, INDIAN, DOUGLAS, etc.
Also the P.M.C. 6-7 h.p. MOTORETTE.

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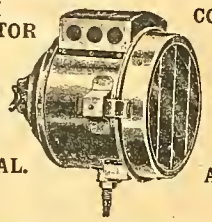
WITH GENERATOR **21/-** ON APPROVAL.



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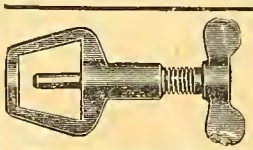
The Famous P.M.C. Searchlight is BRITISH. Our own make. Sturdily constructed of Brass with first-class generator and tube, 21/-



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TRIUMPH, 1908, just enamelled, plated, and overhauled	£30	0
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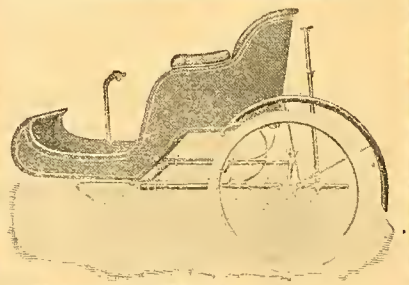

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FROM STOCK, to fit all makes of machines. Right or left hand side.

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PALMER.—Bedelias, 59, 69, 79 guineas; in stock; write, or better call.

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PALMER.—Special agent Bedelias; motor cycles taken part. Write particulars; trials free.

PALMER.—6h.p. De Dion engine car, runs excellently; must sell; £15.

PALMER.—12h.p. side entrance car, 2-cyl., hood, screen; clearance £35.

PALMER.—12h.p. Sunbeam, 4-cyl., hood, screen, beautifully silent; cheap, £65.

PALMER.—12h.p. Radium, 4-cyl., roomy body, live axle; bargain, £55.

PALMER.—8h.p. Darracq, modern type, steel frame, governed inlet; £75.

PALMER.—15h.p. Darracq, 4-cyl., very fine hill-climber, extremely reliable; £95.

PALMER.—16-20h.p. Martini chassis, 4-cyl., steel frame, make splendid van; £60.

PALMER.—30h.p. Peugeot, long, low, side entrance, gate change, magneto; £165.

PALMER.—40h.p. Darracq, double landaulet, 6-cyl., dual ignition; £275.

PALMER.—40-50h.p. chassis, 6-cyl., beautiful silent vehicle, very powerful; £130.

PALMER.—30-35h.p. Vertex, double landaulet, 6-cyl., gate change, like new; £250.

PALMER.—20h.p. Germain, side entrance, 4-cyl., h.t. magneto, hood, screen; £100.

PALMER.—14-16h.p. Brouhot chassis, 4-cyl., magneto, gate change; bargain, £65.

PALMER.—14-20h.p. Lorraine-Dietrich, hood, screen, medium size car; £245.

PALMER.—16-22h.p. Lorraine-Dietrich, hood, screen, gate, full touring car; £225.

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PALMER.—14-16h.p. Motobloc, 4-cyl., roomy body, really good hire car; £120.

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PALMER.—20h.p. motor car, 4-cyl., standard engine, very fine, side entrance; £50.

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PALMER.—All above and many others, with huge stock new and second-hand accessories, seen.

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ECLIPSE.—10-12h.p. Darracq, 1908, dual ignition, long chassis, hood, screen, beautiful order; £98.

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ECLIPSE.—16-20h.p. Scout Chassis, cardan, good order; £45.

ECLIPSE.—28-36h.p. Daimler, side entrance, dual ignition, screen; a bargain, £145.

ECLIPSE.—18-22h.p. Clement, side entrance, magneto, long chassis, hood; £125.

ECLIPSE.—18h.p. Siddeley, side entrance, hood, screen, two ignitions, perfect; £115.

ECLIPSE.—20-32h.p. Darracq, two ignitions, hood, screen, splendid order; £145.

ECLIPSE.—15h.p. Darracq, two ignitions, long chassis, canopy; £100.

ECLIPSE.—15h.p. Humber, side entrance, hood; a bargain, £110.

ECLIPSE.—10-12h.p. Gladiator, tonneau, hood, very smart, perfect; £55.

ECLIPSE.—8h.p. Mathew, detachable tonneau, smart little runabout; £40.

ECLIPSE.—8h.p. M.M.C. runabout, four seats; £29.

ECLIPSE.—4h.p. Sunbeam-Mabley, De Dion engine, good order; £15.

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ECLIPSE Engineering and Motor Co., 55, Earlsfield Rd., Wandsworth. 'Phone, 1135 Putney. Earlsfield Station, L.S.W.R., 15 minutes from Waterloo.

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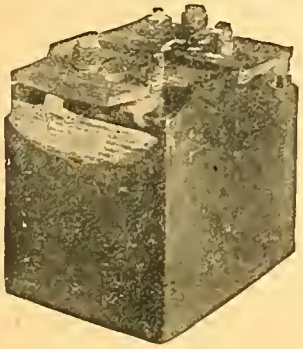

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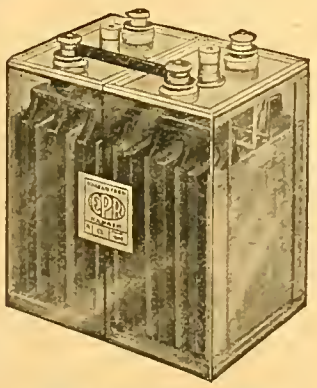

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LANCHESTER, 12-18b.p., water cooled, worm drive, three speeds and reverse, two ignitions, with hood, Stepney, five lamps, seats five, in perfect condition; any reasonable trial; £75.—Taylor, motorist, Westerham, Kent.

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6 h.p. Twin-cyl. Steam Engine; £5, or exchange anything useful.—Povey, Ribbleton Lane, Preston.

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NYE'S.—Precision, J.A.P., Peugeot; splendid exchange terms. Apply for list.—69 Leather Lane, Holborn London, E.C.

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4½ h.p. Twin Minerva, inlet pipes, silencers, cradle plates adjustable pulley, overhauled ready for frame; £8 10s.—25, Dangan Rd., Wanstead, N.E.

3 h.p. Engine, water-cooled head, De Dion pattern, 70s.; large Chater-Lea clutch, fit Rafnir, 35s.; both splendid condition.—Knight, Bromsgrove, Palace Rd., Crouch End London.

GREAT Bargain.—400 Clement engines, air cooled, 1¾h.p., complete with carburetter, silencer, flywheel, ready to put on bicycle frame; £3 each.—L. Sonein, 3, Charles Lane, St. John's Wood, London.

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MAGNETO, Coil and Accumulator repairs in two days; guaranteed; low prices.—Fellows, 26½, Clarges St., Mayfair.

JEBRON, Registered 291-289, vastly superior to platinum, cures misfiring; Jebron has no equal for blades, screws, rockers, magnetos, coils.

JEBRON, 2s. 6d. each rivet fitted; Jebron trimmers, 9d.; Jebron screws fit Bosch magnetos, 5s. 6d. pair; old screws Jebronised, 2s. 6d. each. Over 10,000 fitted. Try it

JEBRON, fitted return post free.—From the inventor, Jebron, 38, Herbert Rd., Plumstead.

JEBRON Contacts used by Messrs. Collier Bros., Colver, and Martin, in making their recent world's records.

PERFECT.—40 amp. accumulator, 10s.; twin plain coil, 12s.; twin Peugeot contact breaker, 4s.—Windsor, Charing Cross, Birkenhead.

MAGNETO and Accumulator Repairs by experts; new and second-hand goods always in stock; list.—The Victoria Garage and Electrical Co., Ltd., Coventry.

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IRIDIUM Champion Contacts.—Any parts fitted returned same day, 1s. 3d. each, warranted pure; special iridium trimmers, 9d.; magneto screws refitted, 1s. 3d. each.—Williams, 16 Wellington St., Woolwich.

WHITE'S Famous High-grade Accumulators; limited quantity of these to clear at following remarkable prices: 15 a.h., 9s. 6d.; 20, 11s. 3d.; 30, 13s.; 40, 15s.; 45, 17s.; 50, 18s.; 60, 22s.—Henshaw, Wheelwright, Stockport.

TYRES.

TWO Dunlop Cross Grooved Covers, 650 by 65, one Dunlop motor cycle cover, 26 by 2½, for sale.—Law and Son, Motor Engineers, Arbroath.

MICHELIN Tyres, wired, 26 by 2, 12s. 3d.; 26 by 2½, 14s.; 26 by 2½, 16s.; beaded, 26 by 2, 14s. 8d.; 26 by 2½, 17s.; 26 by 2½, 21s.—Jack Cairns, London Rd., Preston.

CLINCHER, brand new, rubber studded covers, 26 by 2¼, 25s.; studded Dreadnought, all sizes, 30s.; Clincher tubes, 6s. 6d.—Scottish Motor Agency, 167, Morrison St., Edinburgh.

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MICHELIN Tyres, brand new, guaranteed heavy treads; cash, approval, carriage paid; wired—26 by 2 12s. 3d., 2½ 14s., 2½ 16s., 28 by 2 13s.; beaded—26 by 2 14s. 8d., 2½ 17s., 2½ 21s., 28 by 2 16s. 9d.—Stewart's Cycle Wks., Horsham, Sussex.

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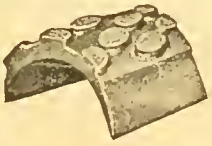

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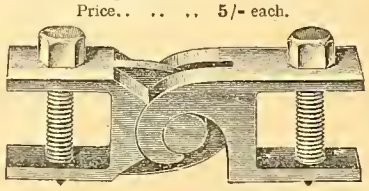

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Type 5B.	Semi-Automatic	32/-
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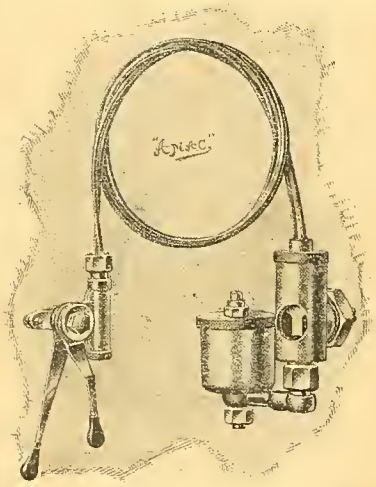

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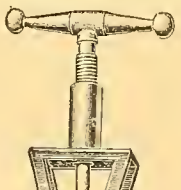

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BASTONE'S.—New motor cycle covers, ribbed pattern; wired edge—26 by 2, 11s. 9d.; 26 by 2¼, 12s. 9d.; 26 by 2½, 13s. 9d.; 28 by 2, 12s. 6d.; 28 by 2¼, 14s. 6d.; beaded edge—26 by 2, 13s. 6d.; 26 by 2¼, 14s. 6d.; 26 by 2½, 16s. 6d.; 28 by 2, 14s. 6d.; 28 by 2¼, 16s. 6d.

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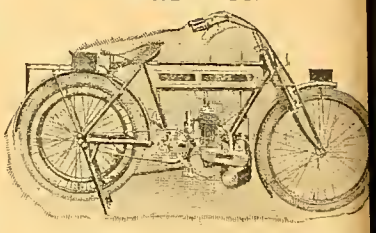
24 Hours' Trial awarded to A.J.S. (Sensible Lightweigh machines.



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Standard 40/- Rubber-studded Cover slightly Shop-soiled,

TO BE CLEARED AT 25/- EACH.

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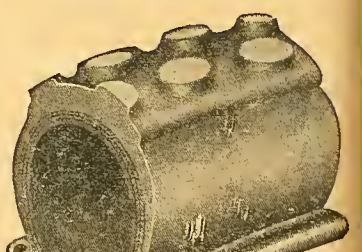

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T.T. Twin 1909 Vindec, Dot, Peugeot; exchange Triumph.—Mogridge, West Derby, Liverpool.

HUBS (Chater-Lea) Wanted; also 26 by 2 covers and tubes.—Knight, Maypole House, Bexley.

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WANTED, 1910 Douglas, perfect condition essential.—Gilbert Thomas, Dyffryn Vicarage, Neath, Glamorgan.

WANTED, 1910 two-speed twin, perfect; cheap for spot cash; state particulars.—Farrell, Lowerhead Row, Leeds.

FIRST-CLASS Modern Motor Cycles and 2-seated cars purchased for cash.—Box 6,267, *The Motor Cycle* Offices, Coventry.

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3½h.p. Brown, little cash, for sidecar combination, or sell £12; first-rate condition.—Sparrow, Hayesthorpe, Holgate, York.

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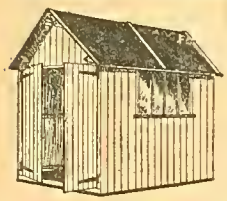

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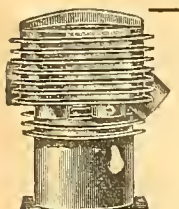

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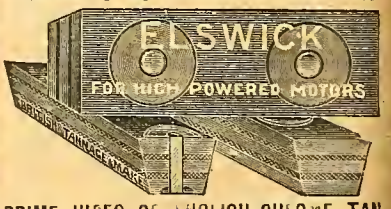

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NO. 9 Chater-Lea Frame, 58s.; pair of wheels, 28s.; pair of tanks, 25s.; Amac carburetter, h.b.c., 21s.—Whitmore, 6, Melbourne Sq., Brixton, London, S.W.

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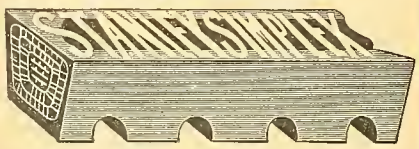

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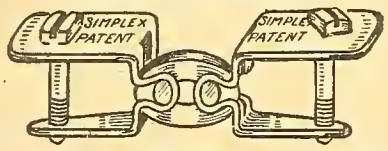

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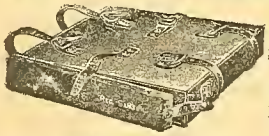

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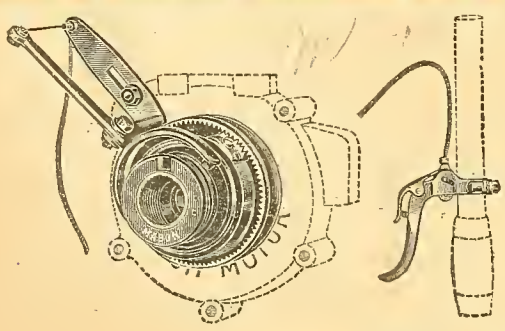

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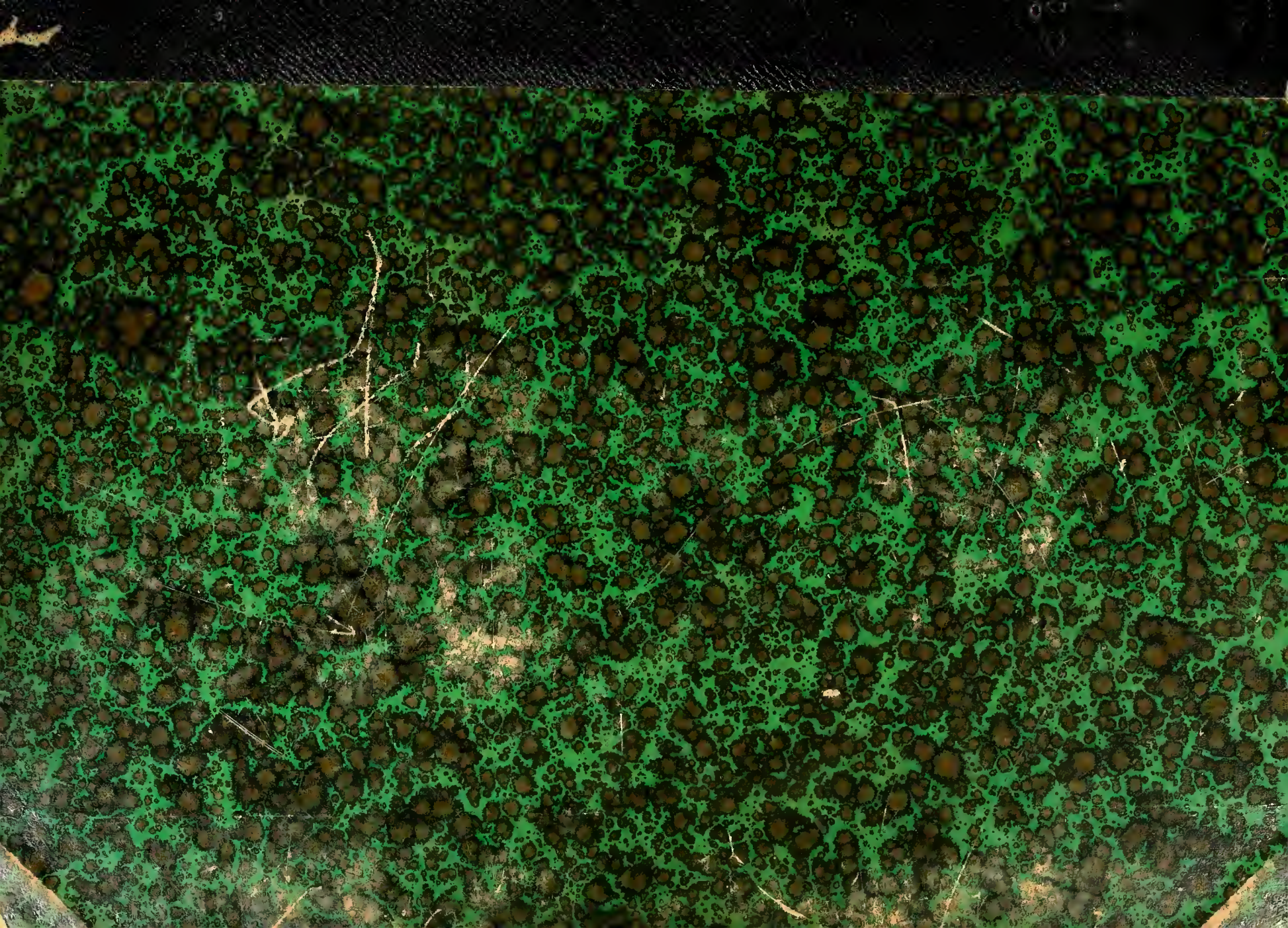
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